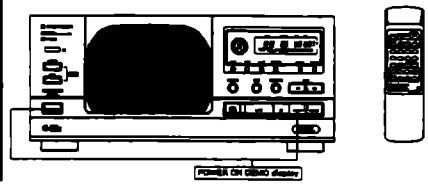
Service Manual

PIONEER
The Art of Entertainment



ORDER NO.
RRV1723

FILE-TYPE CD PLAYER

PD-F906

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	PD-F906		
KU	O	AC120V	
KC	O	AC120V	

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T-FZY DEC. 1996 Printed in Japan

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

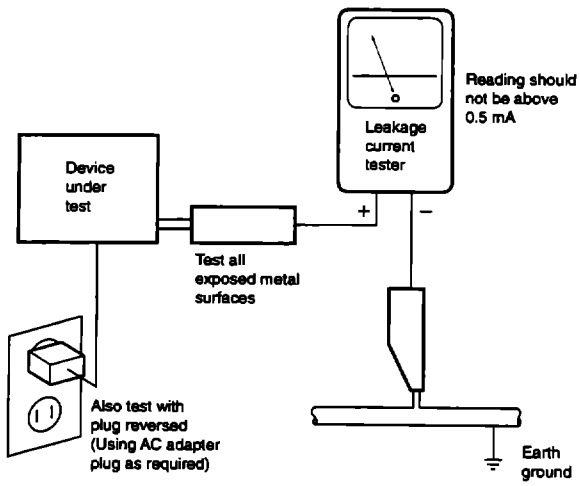
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

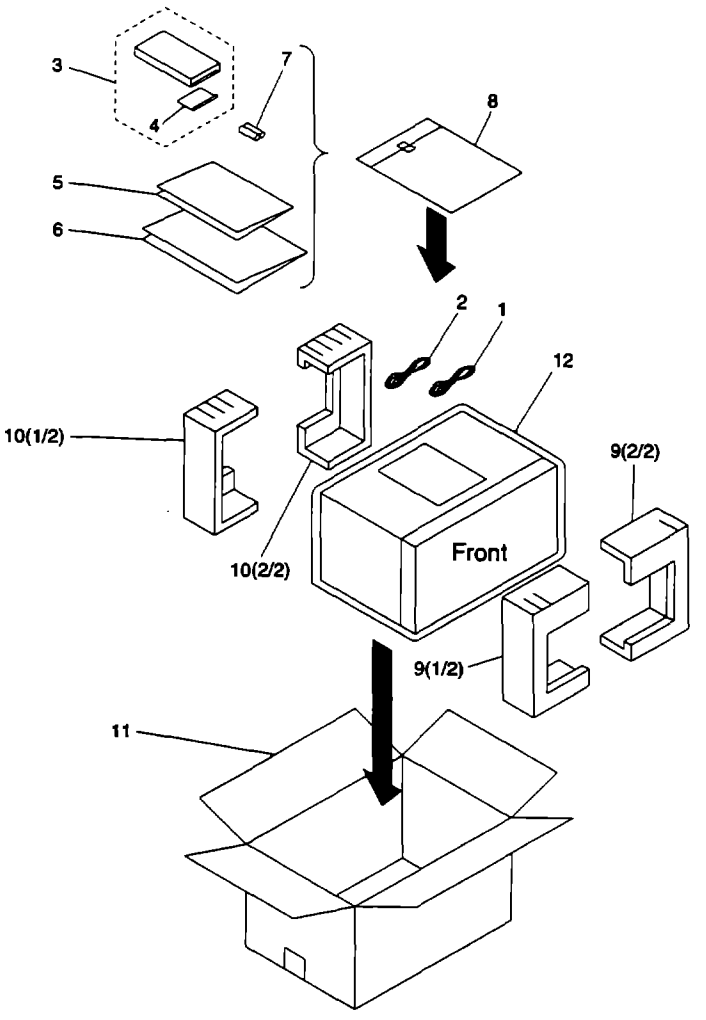
Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. EXPLODED VIEWS AND PARTS LIST

NOTES: • *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
• *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
• *Screws adjacent to ▼ mark on product are used for disassembly.*

2.1 PACKING



(1) Parts List

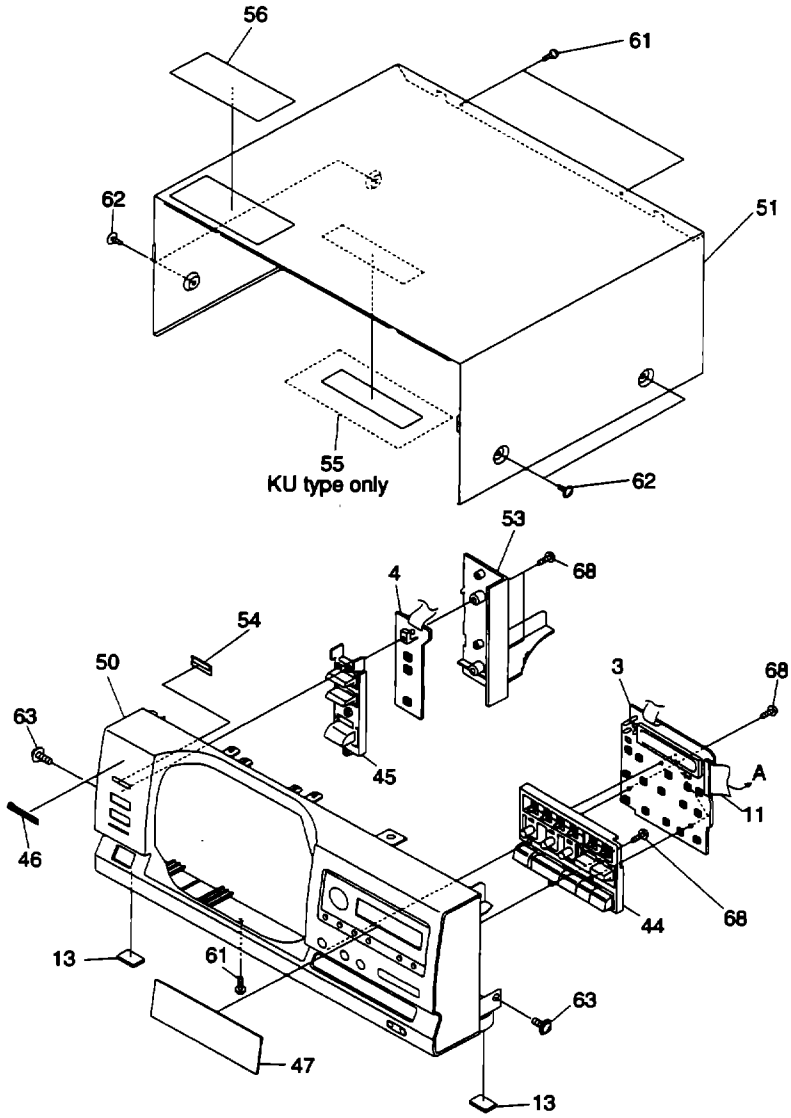
Mark	No.	Description	Parts No.
	1	Control Cable (L=1.0m)	PDE1247
	2	Output Cable (L=1.0m)	PDE1248
	3	Remote Control Unit	PWW1108
	4	Battery Cover	AZN2249
NSP	5	Warranty Card	See Contrast table (2)
	6	Operating Instructions	See Contrast table (2)
NSP	7	Battery (R6P, AA)	VEM – 013
	8	Polyethlene Bag	Z21 – 038
	9	Styrol Protector F	PHA1307
	10	Styrol Protector R	PHA1308
	11	Packing Case	See Contrast table (2)
	12	Mirror Mat	Z23 – 020

(2) Contrast Table

KU and KC have the same construction except for the following:

Mark	No.	Symbol & Description	Part No.		Remarks
			KU TYPE	KC TYPE	
NSP	5	Warranty Card	ARY1044	ARY1039	
	6	Operating instructions (English)	PRB1253	PRB1253	
	6	Operating instructions (French)	Not used	PRD1020	
	11	Packing Case	PHG2226	PHG2232	

2.2 EXTERIOR


56
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KU type only
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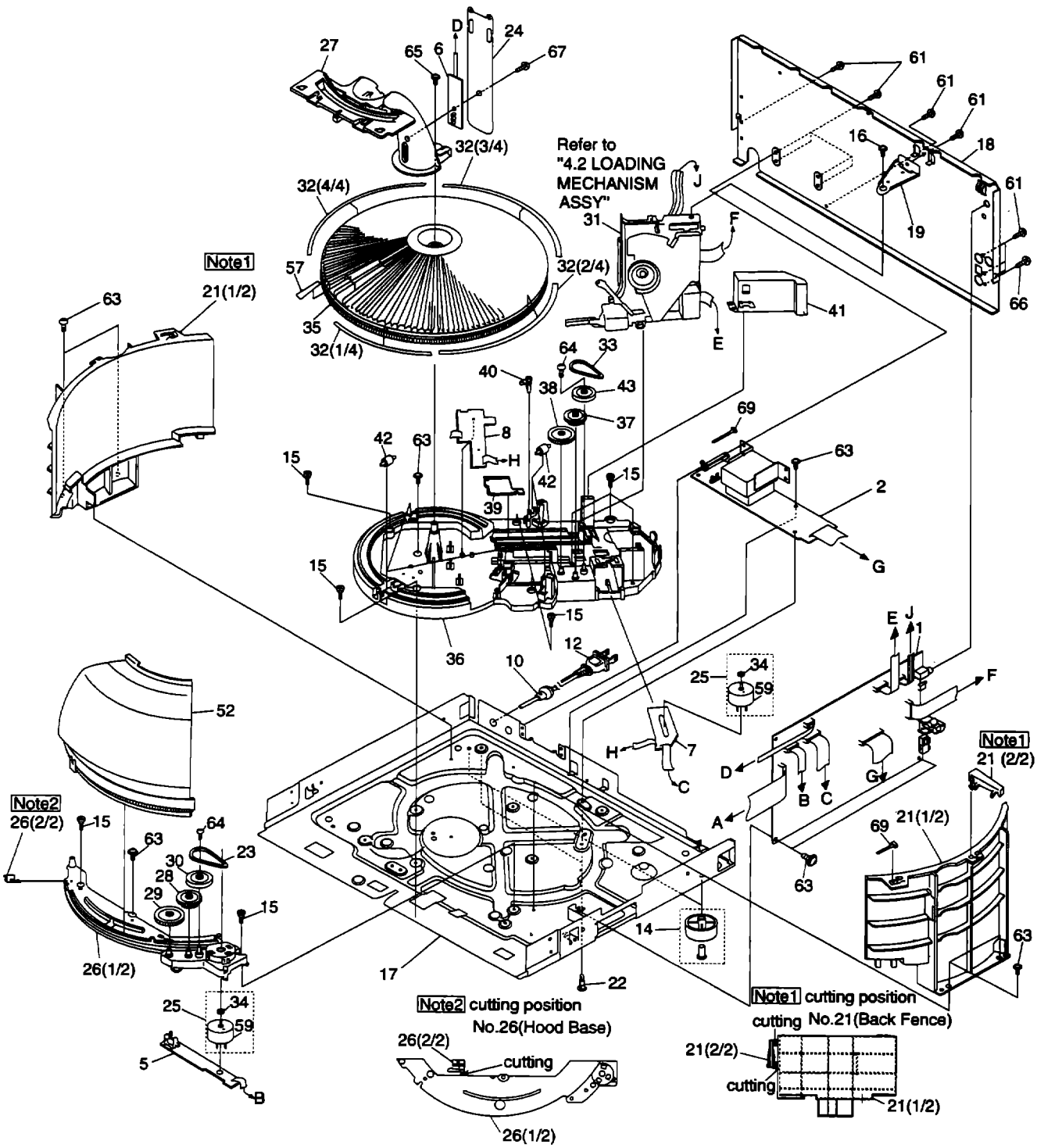

Refer to "4.2 LOADING MECHANISM ASSY"
Note1
Note2
Note2 cutting position
No.26(Hood Base)
Note1 cutting position
cutting No.21(Back Fence)
cutting

(1) Parts List

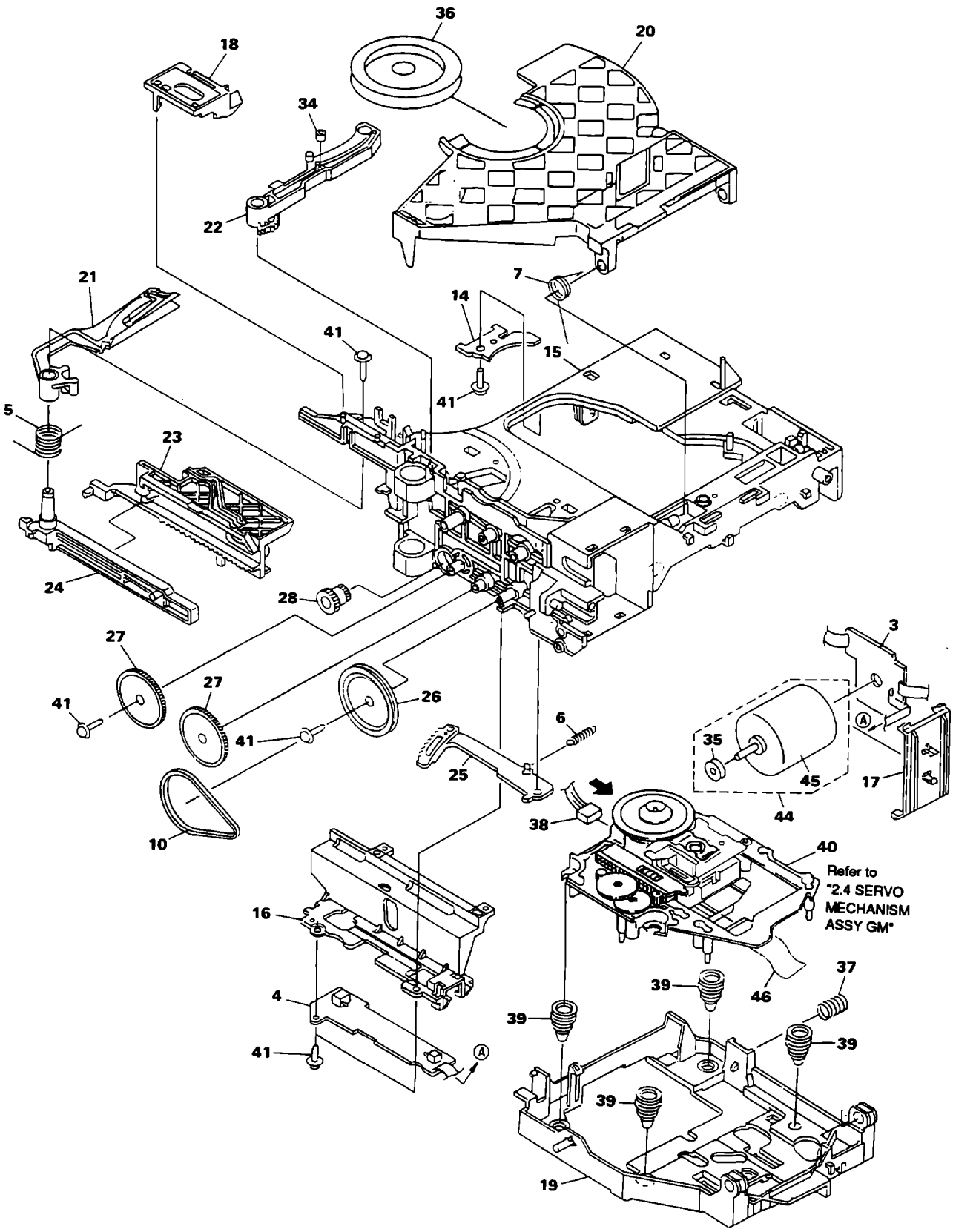
Mark	No.	Description	Parts No.
	1	Main Board Assy	PWZ3400
	2	Power Board Assy	PWZ3414
	3	Display Board Assy	PWZ3426
NSP	4	Switch Board Assy	PWZ3432
NSP	5	Door Board Assy	PWZ3441
NSP	6	Center LED Board Assy	PWZ3443
NSP	7	Select Motor Board Assy	PWZ3324
NSP	8	Sensor Board Assy	PWZ3327
	9	.....	
⚠	10	Cord Stopper	CM – 22C
	11	32P F.F.C/30V	PDD1167
⚠	12	AC Power Cord	PDG1015
	13	Rubber Sheet	AEB1111
	14	Foot Assy	AEC1531
	15	Screw C	PBA1106
	16	Screw	PBA1108
NSP	17	Under Base	PNA2255
	18	Rear Base	PNA2317
	19	Stopper Angle	PNB1559
	20	.....	
	21	Back Fence	PNW2671
NSP	22	Locking Card Spacer	VEC1596
	23	Belt	PEB1288
	24	Cover	PNM1294
	25	Motor Assy	PEA1333
	26	Hood Base	PNW2633
	27	Center Pole	PNW2634
	28	Gear	PNW2641
	29	Gear	PNW2642
	30	Gear Pulley	VNL1662
	31	Loading Mechanism Assy	PXA1589
	32	Rack Label	PAM1732
	33	Belt	PEB1288
	34	Motor Pulley	PNW1634
	35	Disc Rack	PNW2632
	36	Mecha Base	PNW2639
	37	Gear	PNW2641
	38	Gear	PNW2642
	39	Slider	PNW2643
	40	Lock Lever	PNW2644
	41	Mecha Stopper	PNW2646
	42	Roller	PNW2647
	43	Gear Pulley	VNL1662
	44	Control Button	PAC1822
	45	Power Button	PAC1833
	46	Name Plate	PAM1704
	47	Display Window	PAM1725
	48	.....	
	49	.....	
	50	Operation Panel	PNW2742
	51	Bonnet Case	PYY1191
	52	Hood	PNW2732
	53	Side Fence	PNW2674
	54	Sensor Acryl	VNK1566
	55	65 Label	See Contrast table (2)
	56	Label	PRW1428
	57	Label	PRW1429
	58	.....	
	59	Slider Motor	VXM1033
	60	.....	
	61	Screw	BBZ30P080FZK
	62	Screw	FBT40P080FZK
	63	Screw	IBZ30P060FMC
	64	Screw	IPZ20P080FMC
	65	Screw	IPZ30P080FCU
	66	Screw	PMZ30P060FZK
	67	Screw	PPZ30P050FMC
	68	Screw	PPZ30P100FMC
	69	Binder	Z09 – 056

(2) Contrast Table

KU and KC have the same construction except for the following:

Mark	No.	Symbol & Description	Part No.		Remarks
			KU TYPE	KC TYPE	
	55	65 Label	ORW1069	Not used	

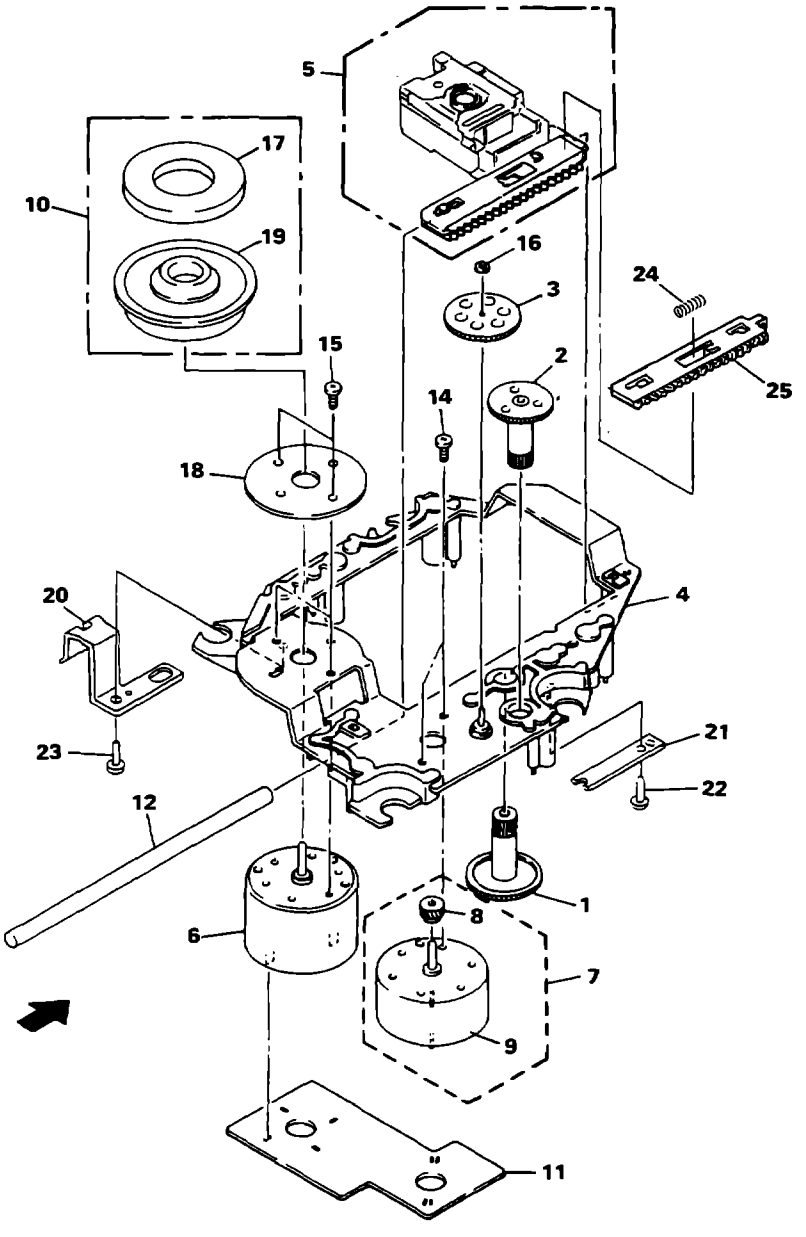
2.3 LOADING MECHANISM ASSY



Parts List

Mark	No.	Description	Parts No.
	1	.....	
	2	.....	
NSP	3	Loading Motor Board Assy	PWZ3337
NSP	4	Load SW Board Assy	PWZ3334
	5	Arm A Spring2	ABH7124
	6	Gear Plate Spring	ABH7051
	7	Clamp Spring	ABH7107
	8	.....	
	9	.....	
	10	Loading Belt	AEB7029
	11	.....	
	12	.....	
	13	.....	
NSP	14	Servo Stopper S	ANB7047
	15	Loading Base	ANW7086
	16	Cam Cover	ANW7052
	17	Motor Holder	ANW7053
	18	Sensor Holder	ANW7054
	19	Float Base 96	PNW2700
	20	Clamper Holder	ANW7084
	21	Arm (A)	ANW7057
	22	Arm (B)	ANW7058
	23	Drive Plate	ANW7059
	24	Arm Plate	ANW7060
	25	Gear Plate	ANW7111
	26	Gear Pulley (B)	ANW7062
	27	Gear A	ANW7063
	28	Drive Gear	ANW7064
	29	.....	
	30	.....	
	31	.....	
	32	.....	
	33	.....	
	34	Roller B	ANW7075
	35	Motor Pulley	PNW1634
	36	Clamper	PNW2692
	37	Float Spring	ABH7049
	38	Connector Assy (4P)	RDE1043
	39	Float Rubber	AEB7028
NSP	40	Servo Mechanism Assy GM	PXA1591
	41	Screw	IPZ20P080FMC
	42	.....	
	43	.....	
	44	Motor Assy	AEA7006
	45	Loading Motor	VXM1034
	46	16P FFC/30V	PDD1180
		Froil (for Service)	GYA1001
		Ha Narl (for Service)	GEM1016

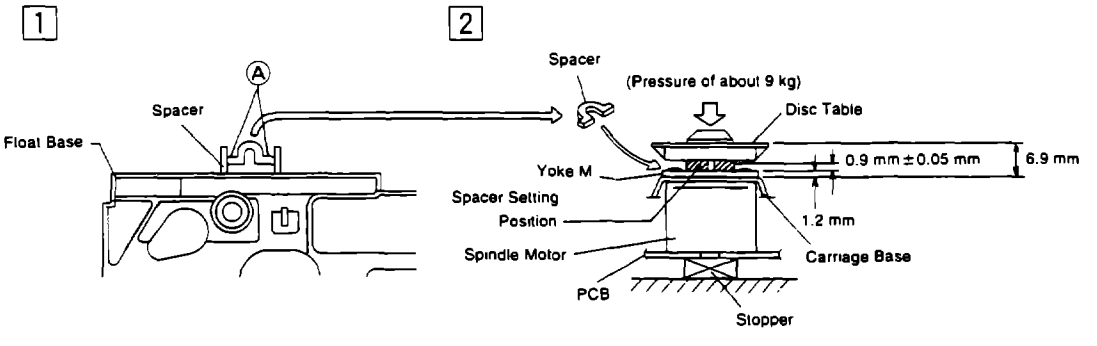
2.4 SERVO MECHANISM ASSY GM



● How to install the disc table

1 Use nipper or other tool to cut the two sections marked Ⓐ figure 1.
Then remove the spacer.

2 While supporting the spindle motor shaft with the stopper, put spacer on top of the yoke M, and stick the disc table on top (takes about 9kg pressure). Take off the spacer.



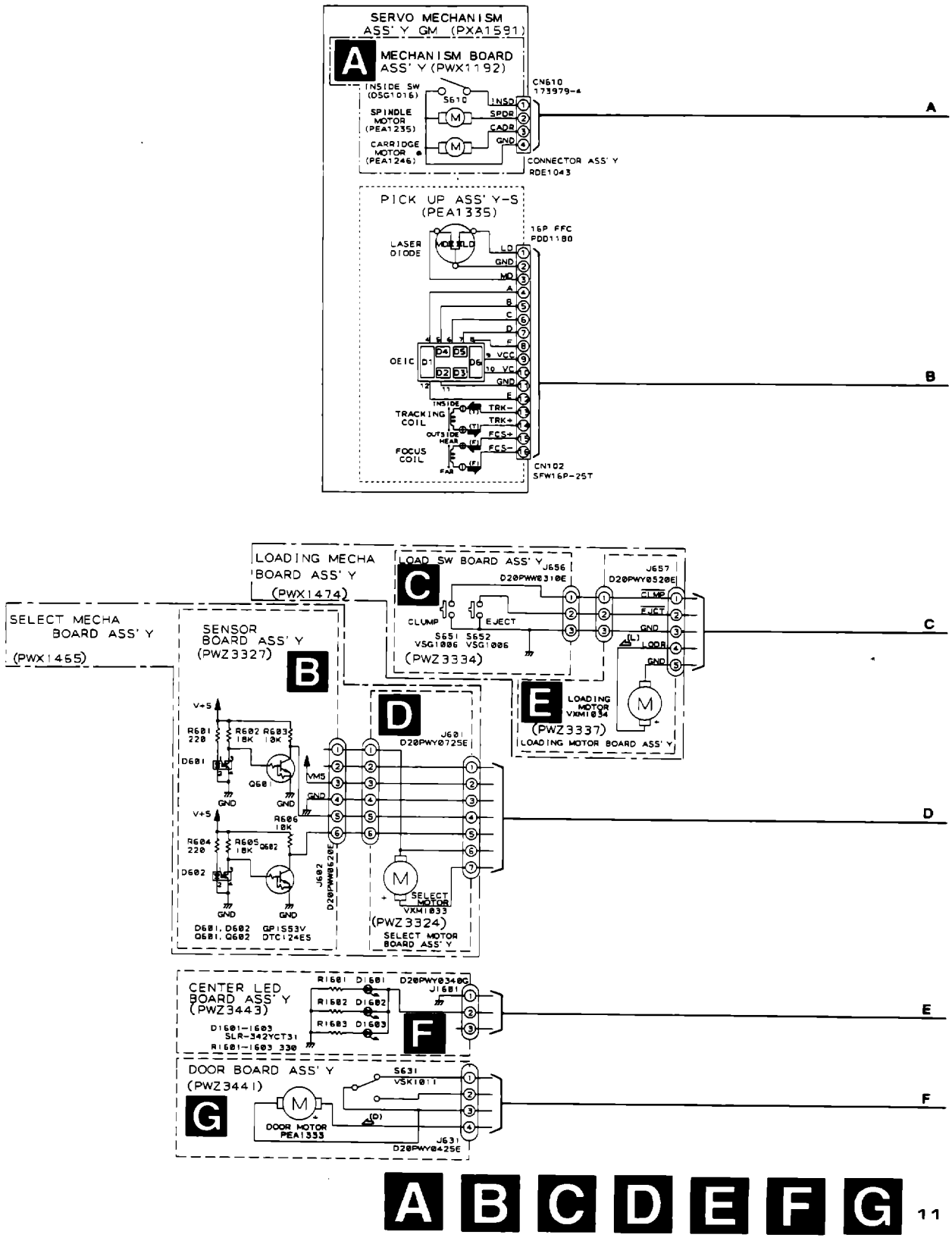
Parts List

Mark	No.	Description	Parts No.
	1	Gear 1	PNW2052
	2	Gear 2	PNW2053
	3	Gear 3	PNW2054
	4	Carriage Base	PNW2699
	5	Pickup Assy – S	PEA1335
	6	D.C. Motor Assy (SPINDLE)	PEA1235
	7	Carriage DC Motor Assy	PEA1246
	8	Pinion Gear	PNW2055
NSP	9	Carriage DC Motor/0.3W	PXM1027
	10	Disc Table Assy	PEA1314
	11	Mechanism Board Assy	PWX1192
	12	Guide Bar	PLA1094
	13	.....	
	14	Screw	JFZ17P025FZK
	15	Screw	JFZ20P040FMC
	16	Washer	WT12D032D025
	17	Clamp Magnet	PMF1014
	18	Yoke M	PNB1312
NSP	19	Disc Table	PNW2410
NSP	20	Float Angle	ANB7020
	21	Gear Stopper	PNB1303
	22	Screw	BPZ20P060FMC
	23	Screw	BPZ26P100FMC
	24	PU Rack Spring	ABH7077
	25	Rack Holder	PNW2056

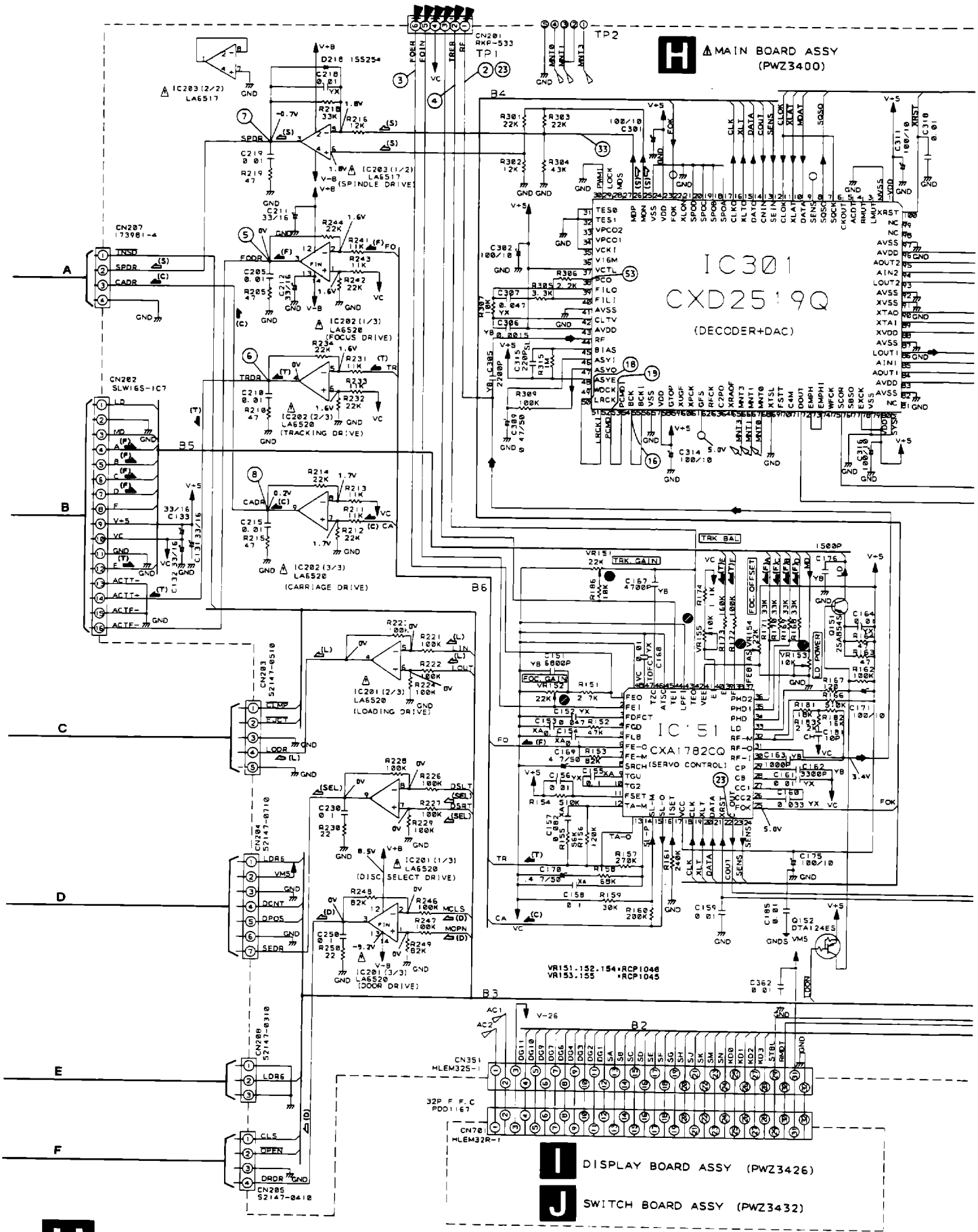
3. SCHEMATIC DIAGRAM

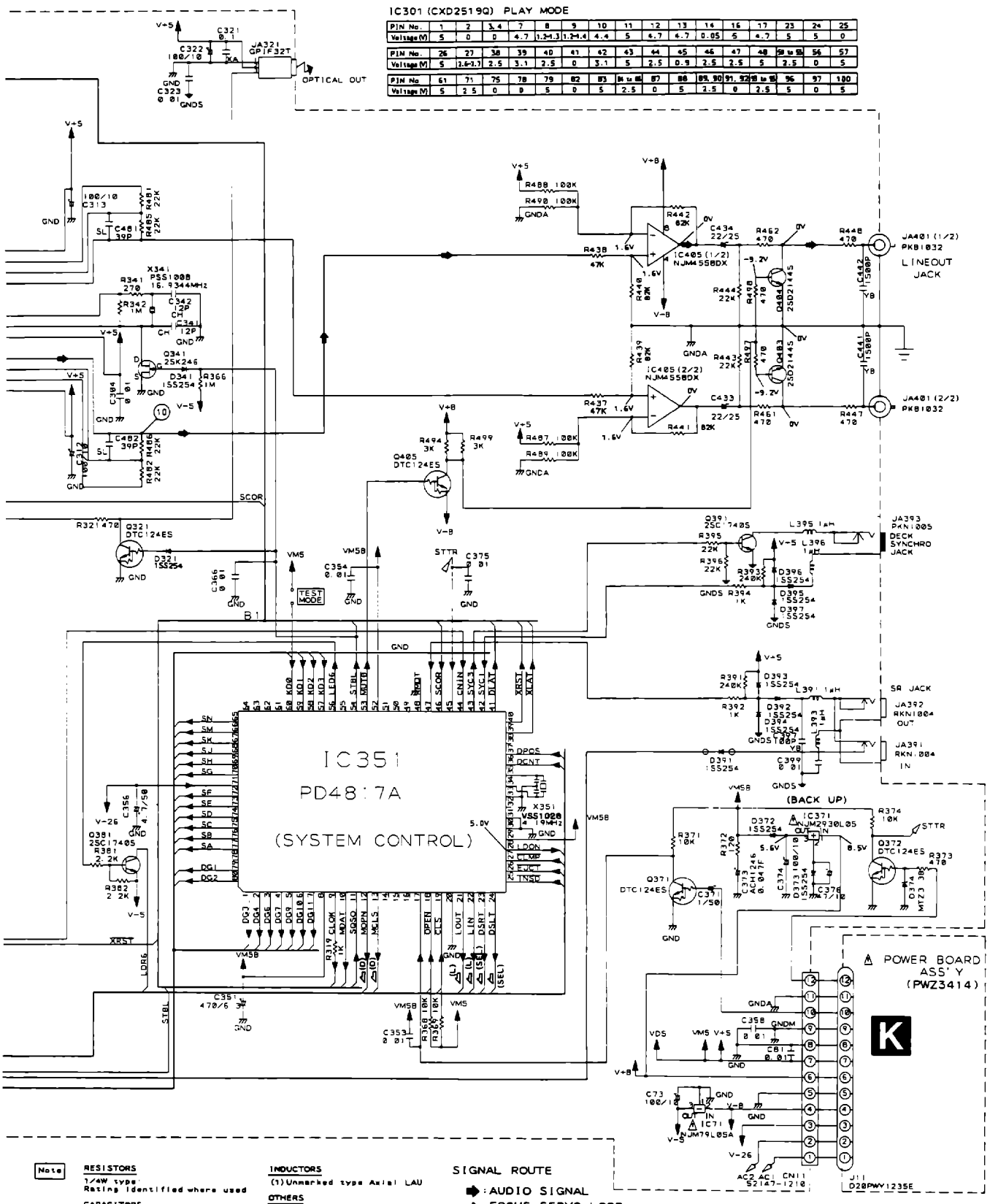
Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST"

3.1 MECHANISM BOARD ASSY, SENSOR BOARD ASSY, LOAD SW BOARD ASSY, SELECT MOTOR BOARD ASSY, LOADING MOTOR BOARD ASSY, CENTER LED BOARD ASSY, DOOR BOARD ASSY AND PICK UP ASSY



3.2 MAIN BOARD ASSY





Note

RESISTORS
1/4W type
Rating identified where used

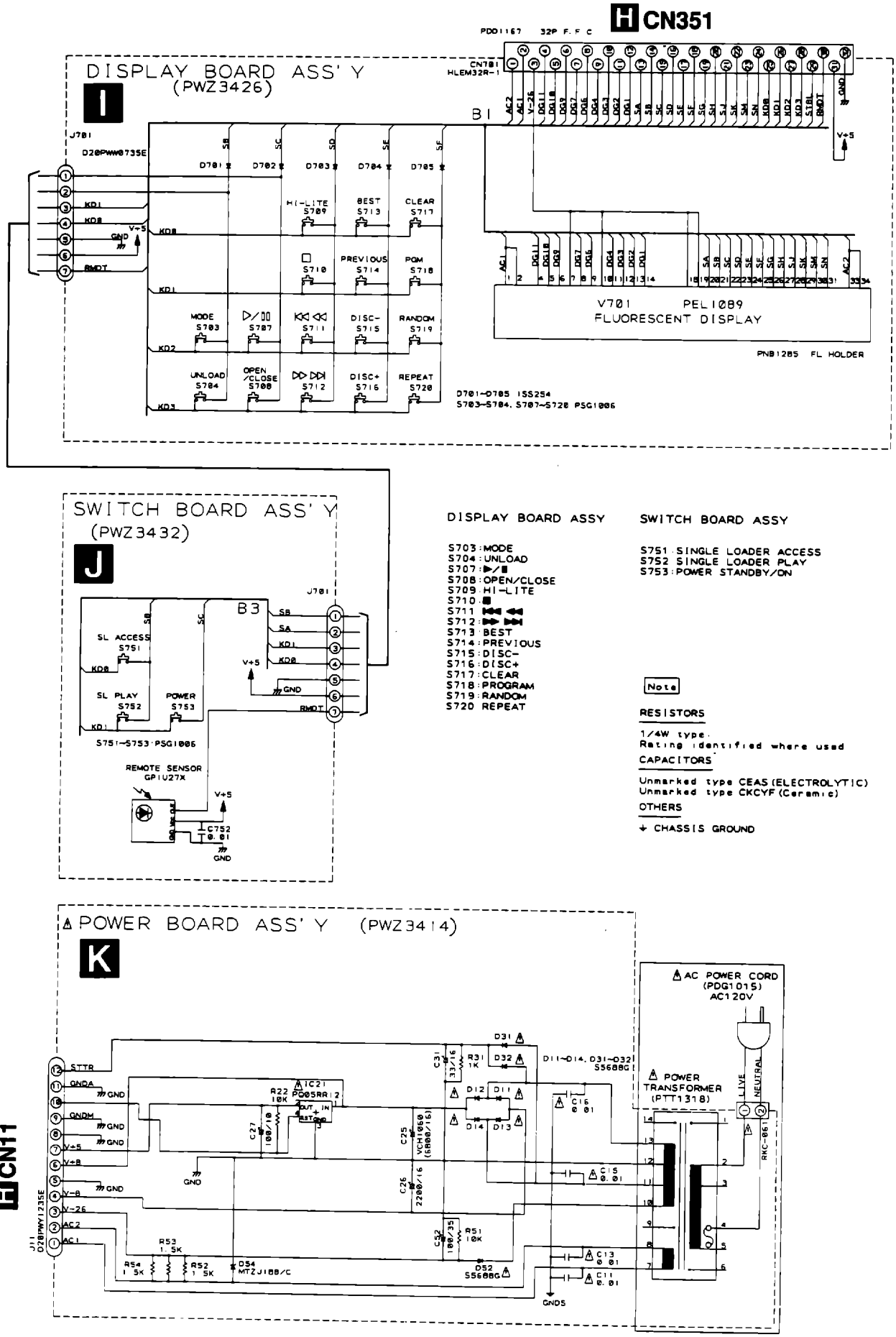
CAPACITORS
(1) YB: Ceramic CKCYB
(2) CH: Ceramic CGCCH
(3) YK Ceramic CQCYX
(4) SL: Ceramic CCCSL
(5) YA: Film CFTYA
(6) XA: Film CFTXA
(7) M-Mylar CQMA
(8) Unmarked type CKCYF(Ceramic)
(9) Unmarked type CEAS(ELECTROLYTIC)

INDUCTORS
(1) Unmarked type Axial LAU

OTHERS
: CHASSIS GROUND
ABC : LOW ACTIVE SIGNAL

SIGNAL ROUTE
: AUDIO SIGNAL

3.3 DISPLAY BOARD ASSY, SWITCH BOARD ASSY AND POWER BOARD ASSY



DISPLAY BOARD ASSY

S703 : MODE
S704 : UNLOAD
S707 : ▶/■
S708 : OPEN/CLOSE
S709 : HI-LITE
S710 : ■
S711 : ⏮ ◀◀
S712 : ▶▶ ⏭
S713 : BEST
S714 : PREVIOUS
S715 : DISC-
S716 : DISC+
S717 : CLEAR
S718 : PROGRAM
S719 : RANDOM
S720 : REPEAT

SWITCH BOARD ASSY

S751 : SINGLE LOADER ACCESS
S752 : SINGLE LOADER PLAY
S753 : POWER STANDBY/ON

Note

RESISTORS

1/4W type.
Rating identified where used

CAPACITORS

Unmarked type CEAS (ELECTROLYTIC)
Unmarked type CKCYF (Ceramic)

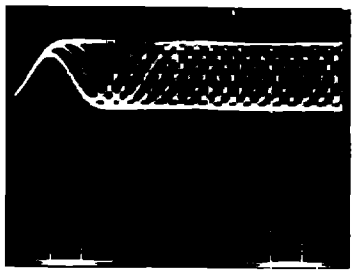
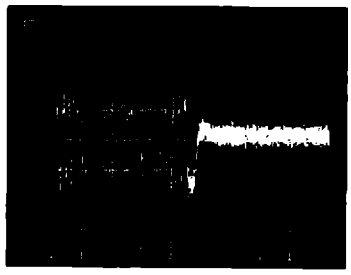
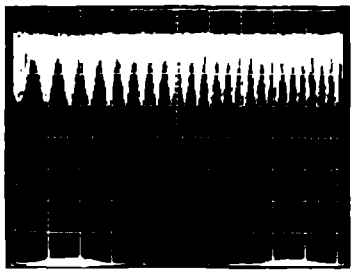
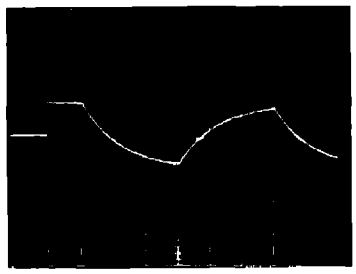
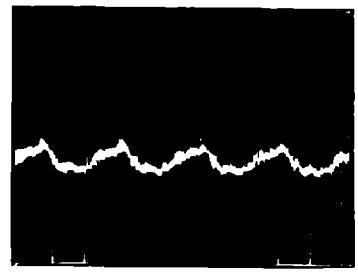
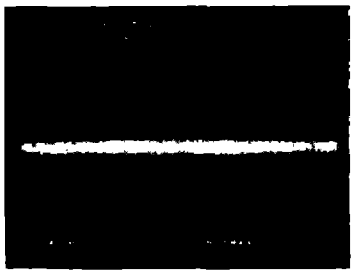
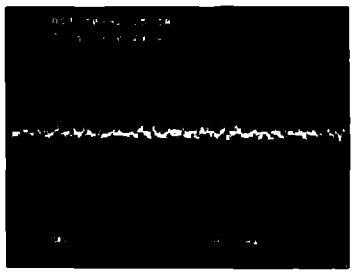
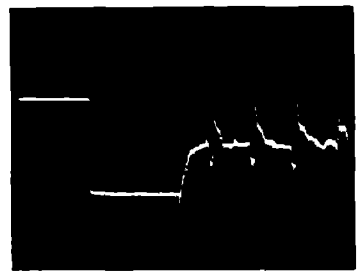
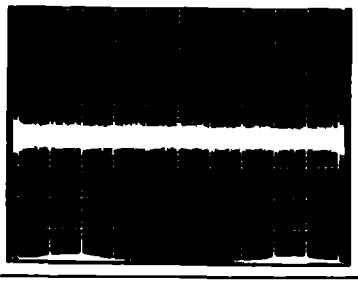
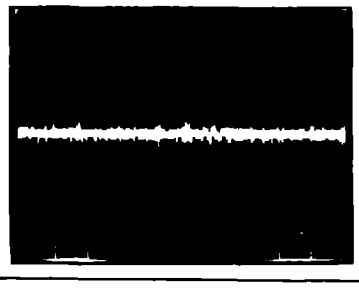
OTHERS

⏚ CHASSIS GROUND

Waveforms

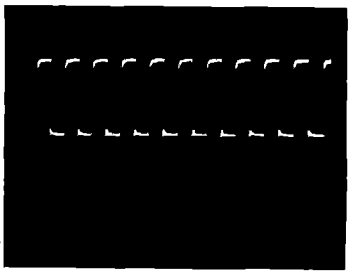
Note : The encircled numbers denote measuring points in the schematic diagram.

*1 50T-JUMP : After switching to the pause mode, press the manual search key.
*2 FOCUS-IN : Press the key without loading a disc.

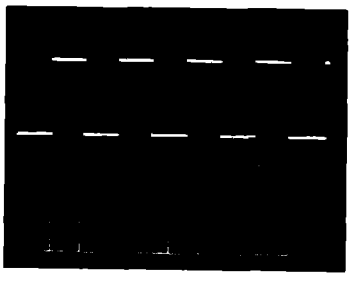
② TP1-Pin 1 : PLAY MODE (RF) 500mV/div 500nsec/div  – VC	④ TP1-Pin 2 : 50T - JUMP (*1) MODE (TRER) 200mV/div 1msec/div  – VC	⑥ IC202-Pin 4 : 50T - JUMP (*1) MODE (TRDR) 500mV/div 1msec/div  – GND
② TP1-Pin 1 : TRACK SEARCH MODE (RF) 500mV/div 200µsec/div  – VC	⑤ IC202-Pin 3 : FOCUS-IN(*2) MODE (FODR) 1V/div 200msec/div  – GND	⑦ IC203-Pin 3 : PLAY MODE (SPDR) 1V/div 50msec/div  – GND
③ TP1-Pin 6 : PLAY MODE (FOER) 100mV/div 10msec/div  – VC	⑤ IC202-Pin 3 : PLAY MODE (FODR) 1V/div 1msec/div  – GND	⑦ IC203-Pin 3 : TRACK SEARCH MODE (SPDR) 2V/div 50msec/div  – GND
④ TP1-Pin 2 : PLAY MODE (TRER) 200mV/div 1msec/div  – VC	⑥ IC202-Pin 4 : PLAY MODE (TRDR) 500mV/div 1msec/div  – GND	⑧ IC202-Pin 9 : PLAY MODE (CADR) 0.2V/div 2sec/div  – GND

⑧ IC202-Pin 9 : TRACK SEARCH MODE (CADR)
2V/div 200msec/div

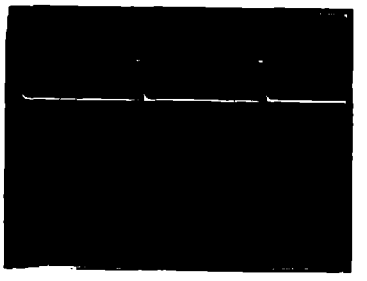
⑯ IC301-Pin 54 : PLAY MODE (1kHz) (BCK)
2V/div 500nsec/div



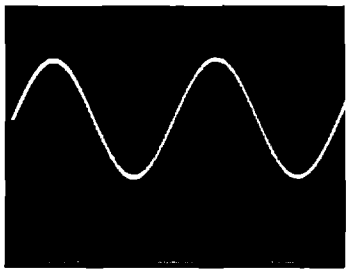
⑱ IC301-Pin 50 : PLAY MODE (1kHz) (LRCK)
2V/div 10µsec/div



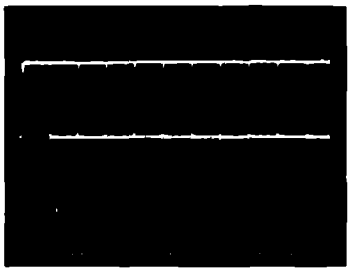
㉝ IC301-Pin 27 : PLAY MODE (MDP)
2V/div 2µsec/div



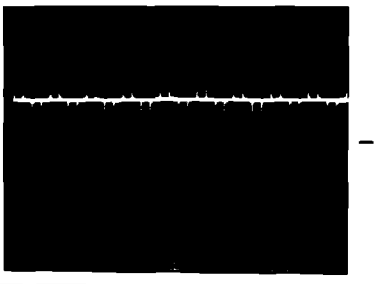
⑩ IC301-Pin 86 : PLAY MODE (1kHz) (LOUT 1)
1V/div 200µsec/div



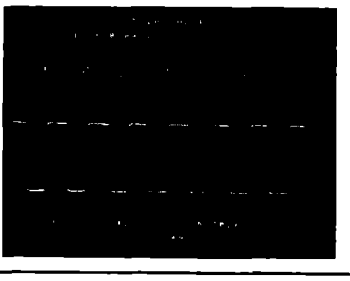
⑲ IC301-Pin 52 : PLAY MODE (1kHz) (PCMD)
2V/div 500nsec/div



㊸ IC301-Pin 38 : PLAY MODE (PCO)
2V/div 10µsec/div

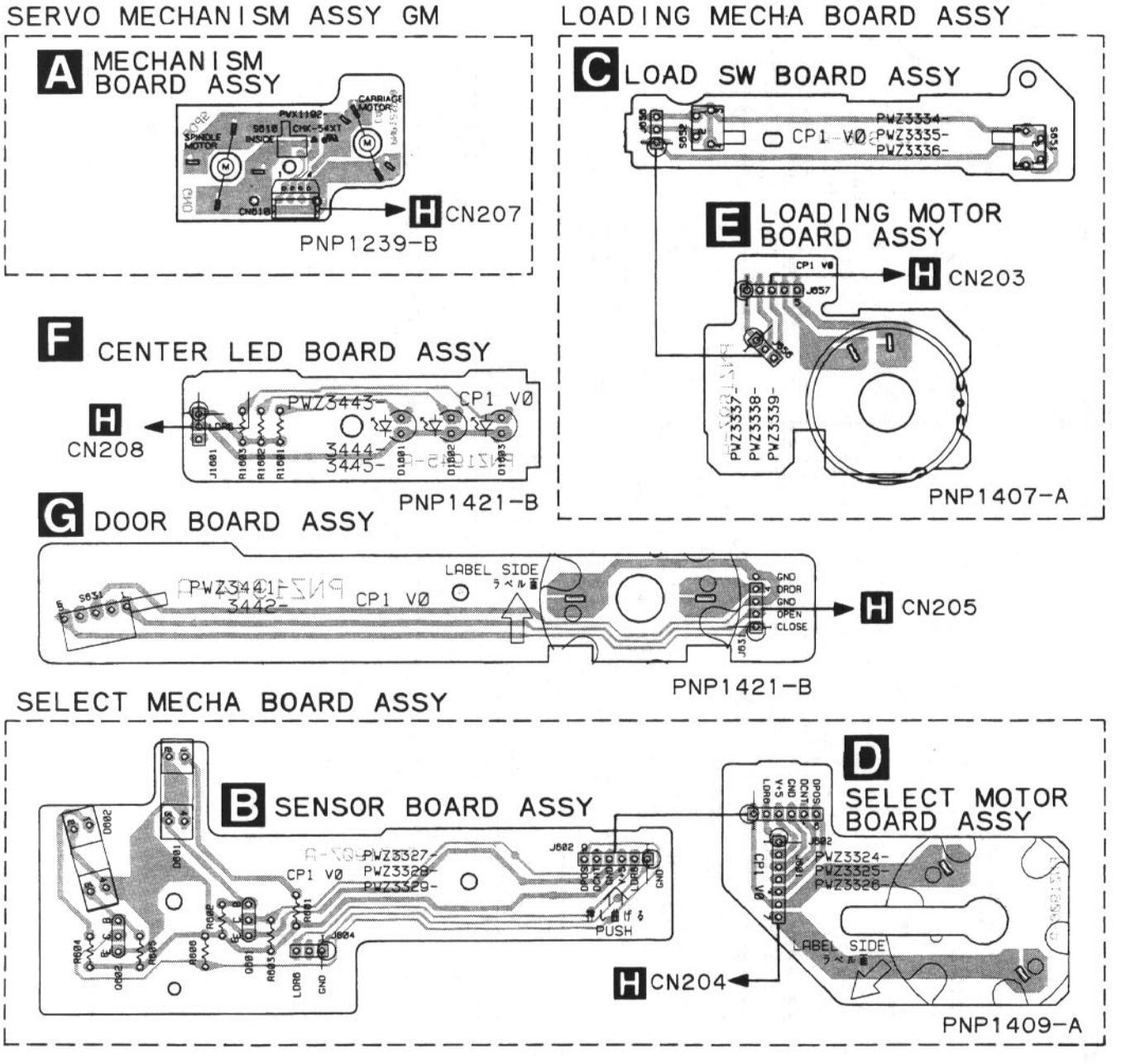


㉓ : TRACK SEARCH MODE
Upper: TP1-Pin1 (RF) 1V/div
Lower: IC151-Pin23 (C.OUT)
2V/div 50µsec/div



4. PCB CONNECTION DIAGRAM

4.1 MECHANISM BOARD ASSY, SENSOR BOARD ASSY, LOAD SW BOARD ASSY, SELECT MOTOR BOARD ASSY, LOADING MOTOR BOARD ASSY, CENTER LED BOARD ASSY AND DOOR BOARD ASSY

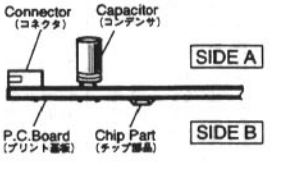


NOTE FOR PCB DIAGRAMS

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

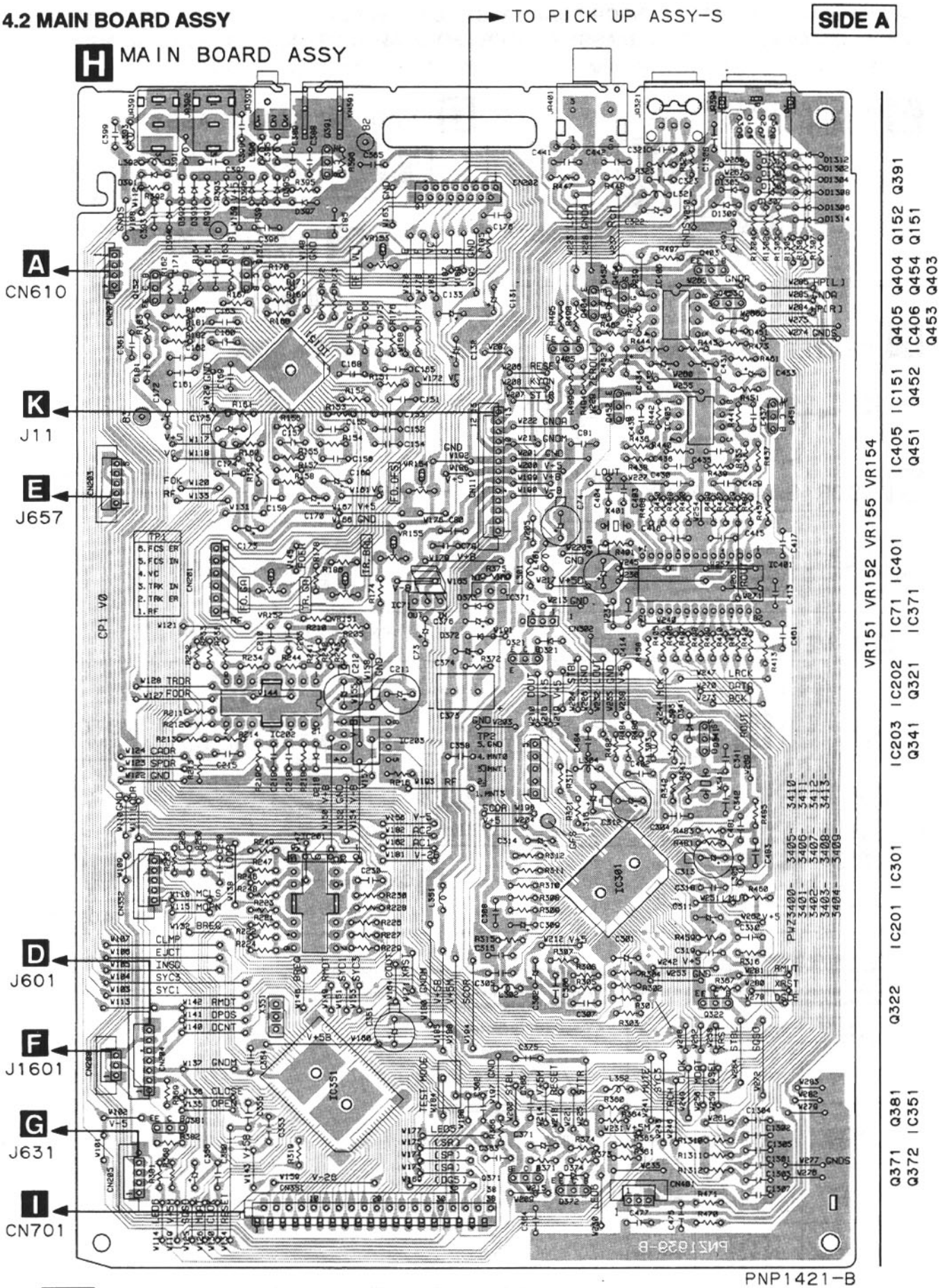
Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

3. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respecitve destinations, be sure to check with the schematic diagram.
4. Viewpoint of PCB diagrams

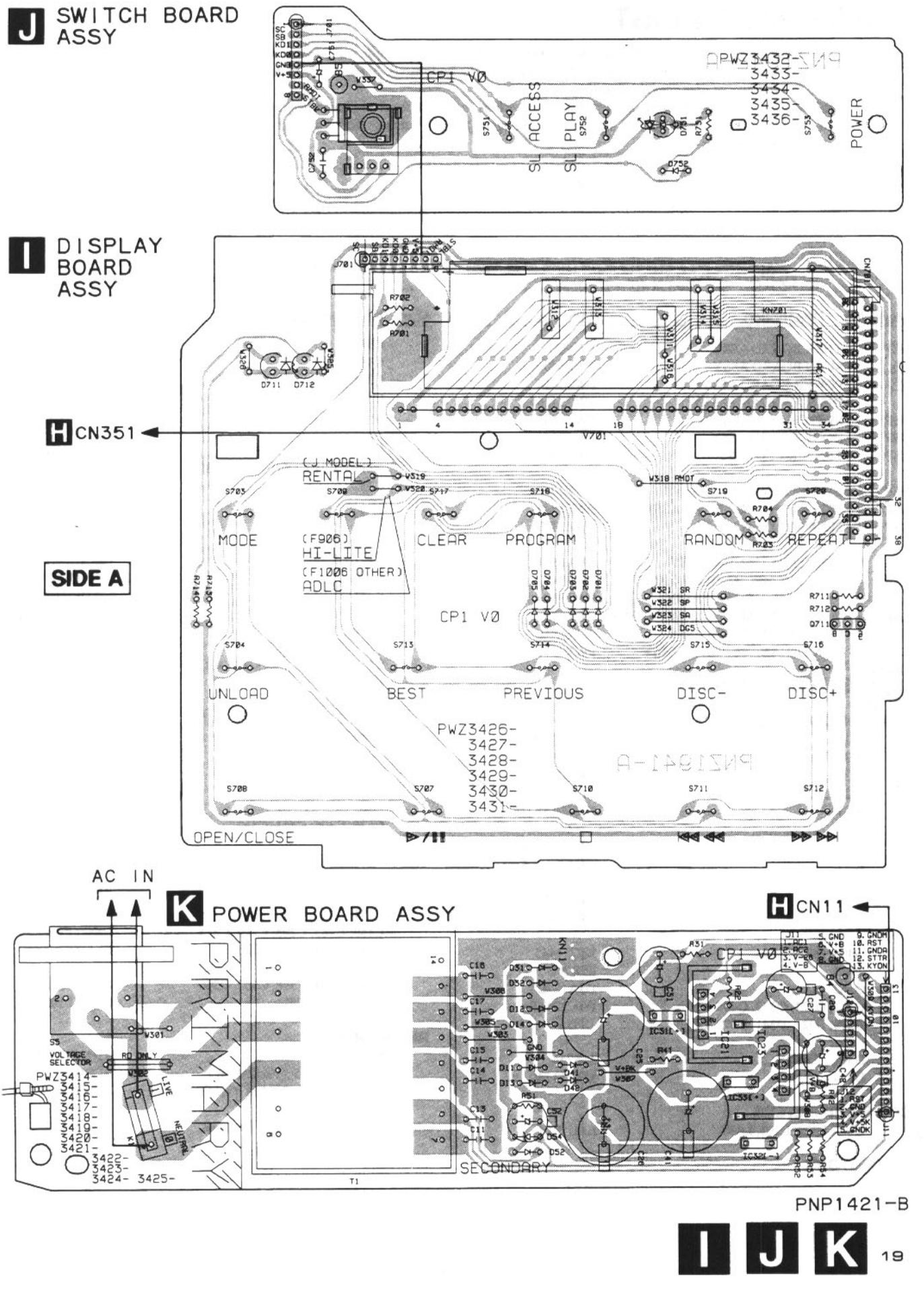


SIDE A

4.2 MAIN BOARD ASSY



4.3 DISPLAY BOARD ASSY, SWITCH BOARD ASSY AND POWER BOARD ASSY



5. PCB PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	→	*56 × 10¹*	→ *561*	*RD1/4PU561J*
47kΩ	→	*47 × 10³*	→ *473*	*RD1/4PU473J*
0.5Ω	→	*R50*		*RN2HR50K*
1Ω	→	*1R0*		*RS1P1R0K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ → 562 × 10¹ → 5621 ..... *RN1/4PC5621F*

Mark	No.	Description	Parts No.
NSP		MOTHER BOARD ASSY	PWM2119
⚠		├ MAIN BOARD ASSY	PWZ3400
⚠		├ POWER BOARD ASSY	PWZ3414
		├ DISPLAY BOARD ASSY	PWZ3426
NSP		├ SWITCH BOARD ASSY	PWZ3432
NSP		├ DOOR BOARD ASSY	PWZ3441
NSP		└ CENTER LED ASSY	PWZ3443
NSP		SELECT MECHA BOARD ASSY	PWX1465
NSP		├ SELECT MOTOR BOARD ASSY	PWZ3324
NSP		└ SENSOR BOARD ASSY	PWZ3327
		LOADING MECHANISM ASSY	PXA1589
NSP		├ LOADING MECHA BOARD ASSY	PWX1474
NSP		│ ├ LOAD SW BOARD ASSY	PWZ3334
NSP		│ └ LOADING MOTOR BOARD ASSY	PWZ3337
NSP		└ SERVO MECHANISM ASSY	PXA1591
		└ MECHANISM BOARD ASSY	PWX1192

H MAIN BOARD ASSY

SEMICONDUCTORS

Mark	No.	Parts No.
	IC151	CXA1782CQ
	IC301	CXD2519Q
⚠	IC203	LA6517
⚠	IC201, IC202	LA6520
⚠	IC371	NJM2930L05
	IC405	NJM4558DX
⚠	IC71	NJM79L05A
	IC351	PD4817A
	Q151	2SA854S
	Q381, Q391	2SC1740S
	Q403, Q404	2SD2144S
	Q341	2SK246
	Q152	DTA124ES
	Q321, Q371, Q372, Q405	DTC124ES
	D218, D321, D341, D372, D373	1SS254
	D391 – D397	1SS254
	D374	MTZJ3.3B

COILS AND FILTERS

Mark	No.	Parts No.
	L391, L393, L395, L396	LAU1R0J

CAPACITORS

Mark	No.	Parts No.
	C373	ACH1246
	C181	CCCCH100D50
	C341, C342	CCCCH120J50
	C315	CCCSL221J50
	C481, C482	CCCSL390J50
	C171, C175, C301, C302	CEAS101M10
	C311 – C314, C316, C322, C374	CEAS101M10
	C73	CEAS101M10
	C371	CEAS1R0M50
	C433, C434	CEAS220M25
	C131 – C133, C211, C212	CEAS330M16
	C376	CEAS470M10
	C351	CEAS471M6R3
	C169, C170, C356	CEAS4R7M50
	C309	CEASR47M50
	C153 – C155, C158, C230, C250	CFTXA104J50
	C321	CFTXA104J50
	C157	CFTXA823J50
	C156, C161, C164, C168, C218	CGCYX103K25
	C160	CGCYX333K25
	C152, C307	CGCYX473K25
	C397	CKCYB101K50
	C163	CKCYB102K50
	C176, C306, C441, C442	CKCYB152K50
	C305	CKCYB222K50
	C162	CKCYB332K50
	C167	CKCYB472K50
	C151	CKCYB682K50
	C159, C185, C205, C210, C215	CKCYF103Z50
	C219, C304, C318, C323	CKCYF103Z50
	C353, C354, C358, C362, C366	CKCYF103Z50
	C375, C399, C81	CKCYF103Z50

RESISTORS

Mark	No.	Parts No.
	R157	RD1/4VM274J
	VR153, VR155 (10kΩ/0.1W)	RCP1045
	VR151, VR152, VR154 (22kΩ/0.1W)	RCP1046
	Other Resistors	RD1/4PU□□□J

OTHERS

Mark	No.	Description	Parts No.
	CN207	MT 4P CONNECTOR	173981 – 4
	CN208	3P JUMPER CONNECTOR	52147 – 0310
	CN205	4P JUMPER CONNECTOR	52147 – 0410
	CN203	5P JUMPER CONNECTOR	52147 – 0510
	CN204	7P JUMPER CONNECTOR	52147 – 0710
	CN11	12PJUMPER CONNECTOR	52147 – 1210
	JA321	OPTICAL LINK OUT	GP1F32T
	CN351	CONNECTOR	HLEM32S – 1
	JA401	JACK	PKB1032
	JA393	JACK	PKN1005
	X341	XTAL RES (OSC)(16.9344MHz)	PSS1008
	JA391, JA392	JACK	RKN1004
	CN201	CONNECTOR 6P	RKP – 533
	CN202	CONNECTOR	SLW16S – 1C7
		SCREW PLATE	VNE1948
	X351	CERAMIC RESONATOR(4.19MHz)	VSS1028

K POWER BOARD ASSY

SEMICONDUCTORS

Mark	No.	Description	Parts No.
⚠	IC21		PQ05RR12
	D54		MTZJ18B/C
⚠	D11 – D14, D31, D32, D52		S5688G

CAPACITORS

No.	Description	Parts No.
C27		CEAS101M10
C52		CEAS101M35
C26		CEAS222M16
C31		CEAS330M16
C11, C13, C15, C16		CKCYF103Z50
C25	(6800μF 16V)	VCH1060

RESISTORS

	Description	Parts No.
	Other Resistors	RD1/4PU□□□J

OTHERS

Mark		Description	Parts No.
⚠		POWER TRANSFOMER	PTT1318
⚠		TERMINAL	RKC – 061

I DISPLAY BOARD ASSY

SEMICONDUCTORS

No.	Parts No.
D701 – D705	1SS254

SWITCHES AND RELAYS

No.	Parts No.
S703, S704, S707 – S720	PSG1006

OTHERS

No.	Description	Parts No.
CN701	CONNECTOR	HLEM32R – 1
V701	FL INDICATOR TUBE	PEL1089

J SWITCH BOARD ASSY

SWITCHES AND RELAYS

No.	Parts No.
S751 – S753	PSG1006

CAPACITORS

No.	Parts No.
C752	CKCYF103Z50

OTHERS

Mark	No.	Description	Parts No.
		REMOTE RECEIVER UNIT	GP1U27X

G DOOR BOARD ASSY

OTHERS

No.	Description	Parts No.
	REAF SWITCH	VSK1011

F CENTER LED ASSY

SEMICONDUCTORS

No.	Parts No.
D1601 – D1603	SLR – 342YCT31

RESISTORS

	Description	Parts No.
	Other Resistors	RD1/4PU□□□J

D SELECT MOTOR BOARD ASSY

SELECT MOTOR BOARD assembly has no service part.

B SENSOR BOARD ASSY

SEMICONDUCTORS

No.	Parts No.
Q601, Q602	DTC124ES
D601, D602	GP1S53V

RESISTORS

	Description	Parts No.
	Other Resistors	RD1/4PU□□□J

C LOAD SW BOARD ASSY

SWITCHES AND RELAYS

No.	Parts No.
S651, S652	VSG1006

OTHERS

No.	Description	Parts No.
J656	3P JUMPER WIRE	D20PWW0310E

E LOADING MOTOR BOARD ASSY

LOADING MOTOR BOARD assembly has no service part.

A MECHANISM BOARD ASSY

SWITCHES AND RELAYS

No.	Parts No.
S610	DSG1016

OTHERS

No.	Description	Parts No.
CN610	MT 4P CONNECTOR	173979 – 4

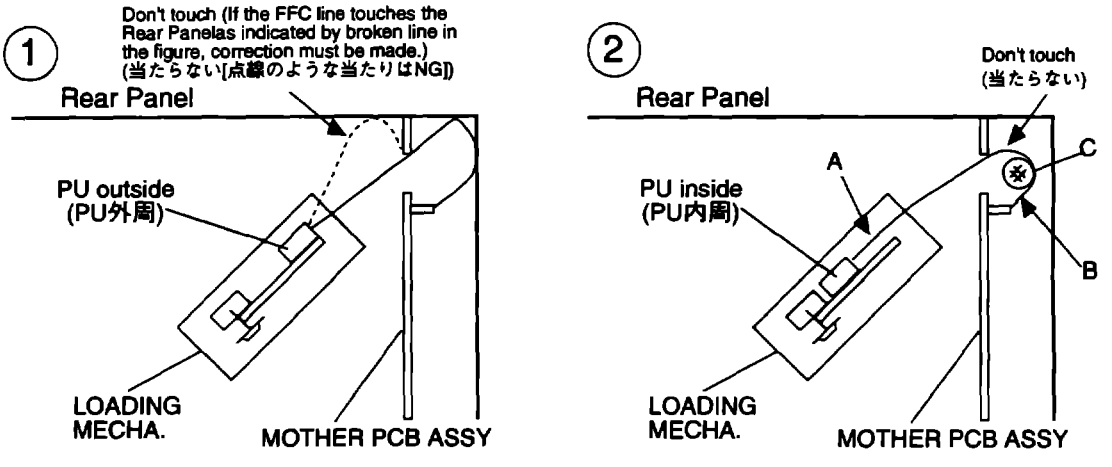
6. ADJUSTMENT (調整方法)

6.1 MECHANISM ADJUSTMENTS (機構系調整)

[Confirmation of the FFC line for pickup]
[ピックアップ用FFC線処理確認]

The following points must be confirmed before installation into the Bonnet.
ボンネット組込み前に次の確認が必要です。

As shown in the figure below, the FFC line should not : ① Touch the left side of the Rear Panel when the FFC line is at the outer circumference of the PU, or ② Touch the right side of the Rear Panel when the FFC line is at the inner circumference of the PU. (When the FFC line touches the Rear Panel in the case of ②, insert your finger at the point C shown in the figure to lightly correct the line.)
下図のように① PU外周位置でリアパネル左側に当たらない。或いは、② PU内周位置でリアパネル右側に当たらない。
(②で当たる場合は、図中C部に指を入れ、軽く補正する。)

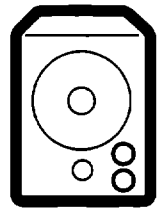
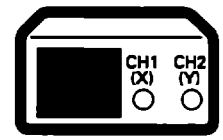
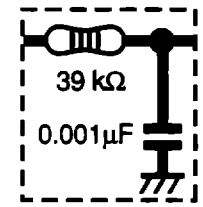
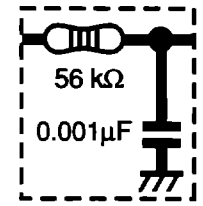


Take adequate caution when handling the FFC line. Do NOT bend the line (particularly the reinforcement made for connection between A and B, as indicated in the figure above).
また、FFCの取扱いには十分注意し、折り曲げ等(特に上図A, Bのコネクタ補強部の端)なきように注意願います。

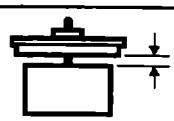
6.2 ELECTRIC ADJUSTMENTS (電気系調整)

6.2.1 PREPARATIONS (準備)

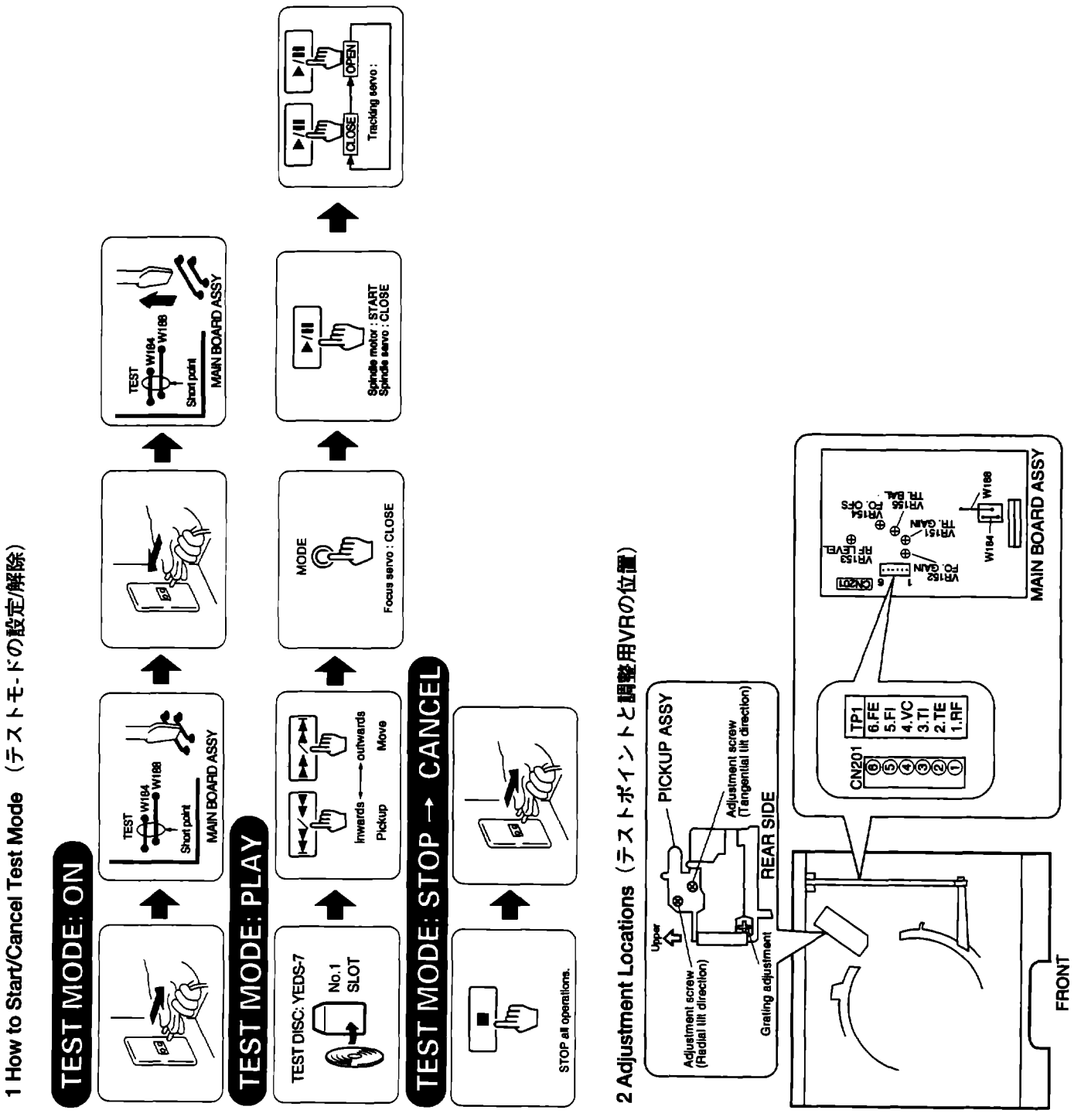
1.1 Jigs and Measuring Instruments (使用測定器/治工具類)

 CD TEST DISC (YEDS-7)	 ⊖ Precise screwdriver	 ⊖ screwdriver (small)	 ⊕ screwdriver (medium)
 ⊕ screwdriver (large)	 Low-frequency oscillator	 Dual-trace oscilloscope (10 : 1 probe)	 Low pass filter① (39 kΩ + 0.001μF)
			 Low pass filter② (56 kΩ + 0.001μF)

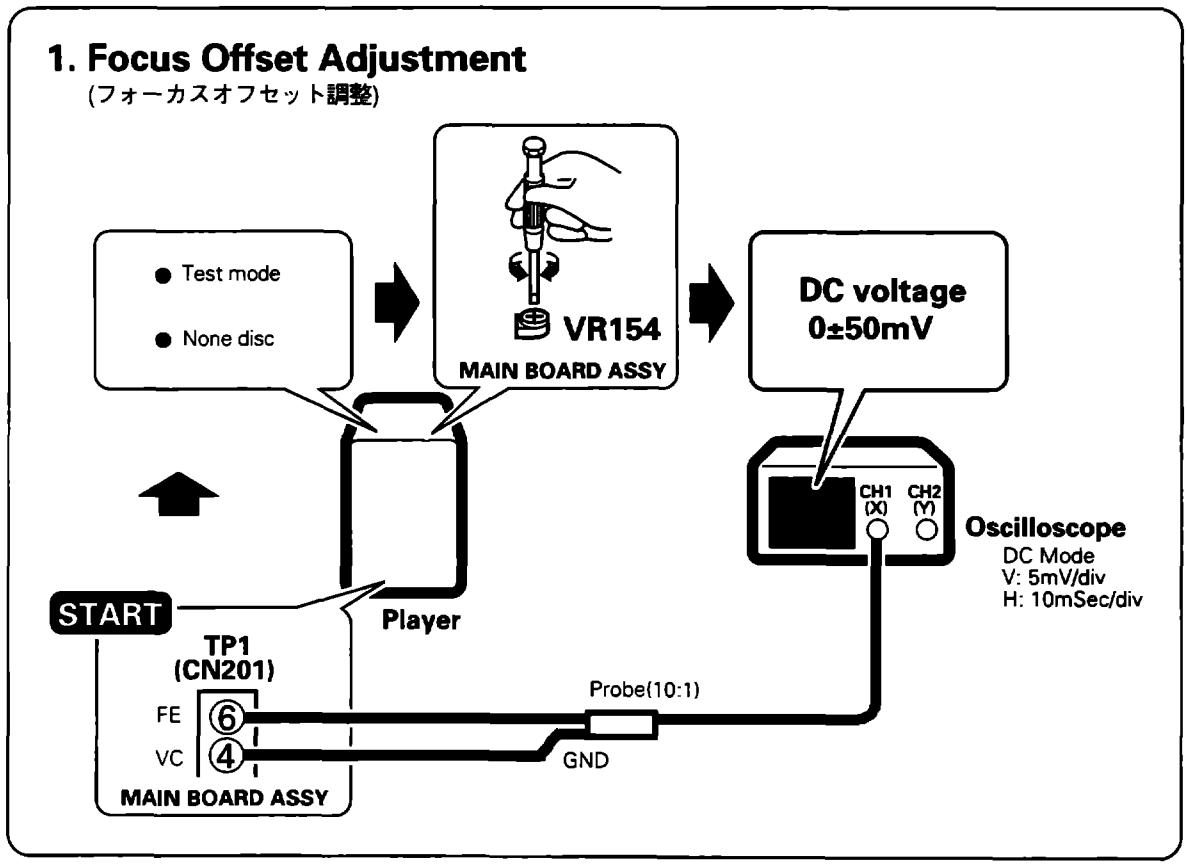
1.2 Necessary Adjustment Points (調整に必要な項目)

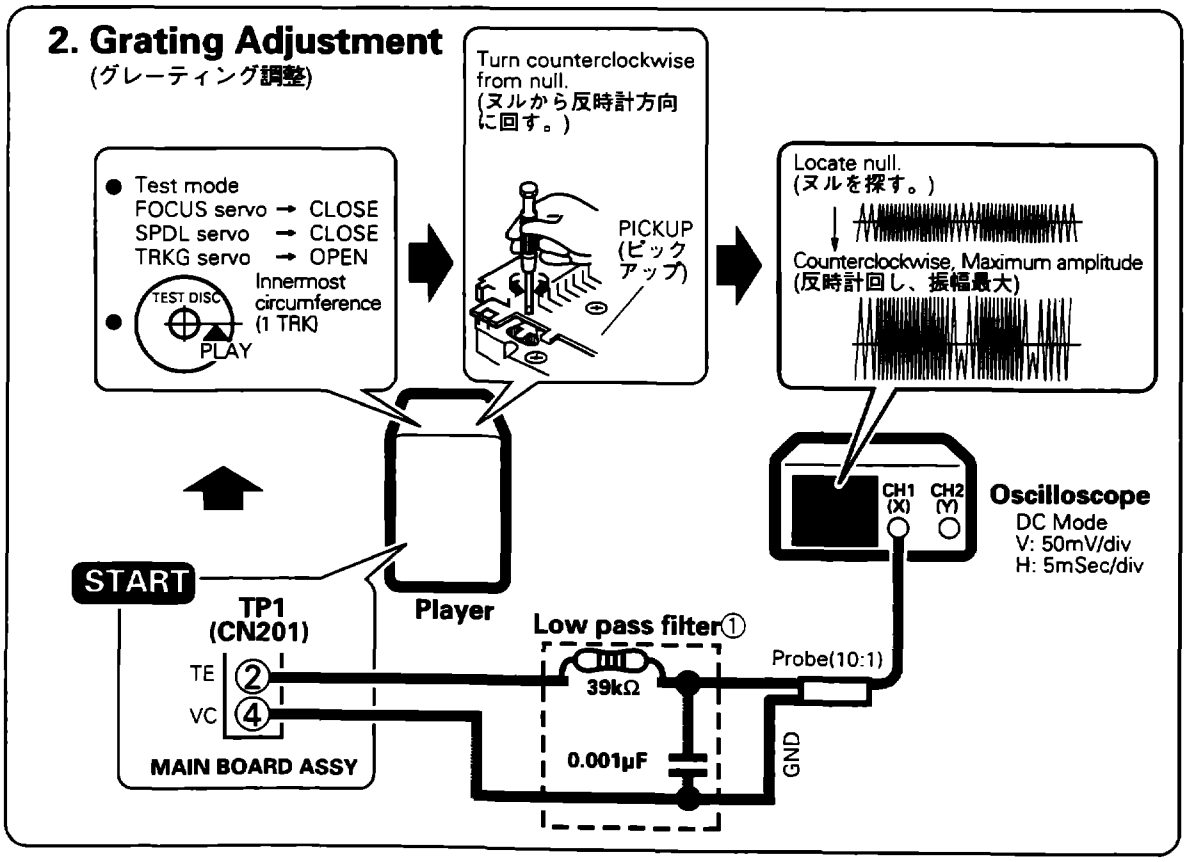
When (このような時)	Adjustment points
Exchange PICKUP (ピックアップを交換した時)	1.2.3.4.5.6. → Page 25~28
Exchange CD ASSY (CD ASSYを交換した時)	1.2.3.4.5.6. → Page 25~28
Exchange SERVO MECH ASSY (サーボメカ ASSYを交換した時)	1.2.3.4.5.6. → Page 25~28
Exchange SPINDLE MOTOR (スピンドルモーターを交換した時)	 ADJ → Page 9

6.2.2 ADJUSTMENT (調整)

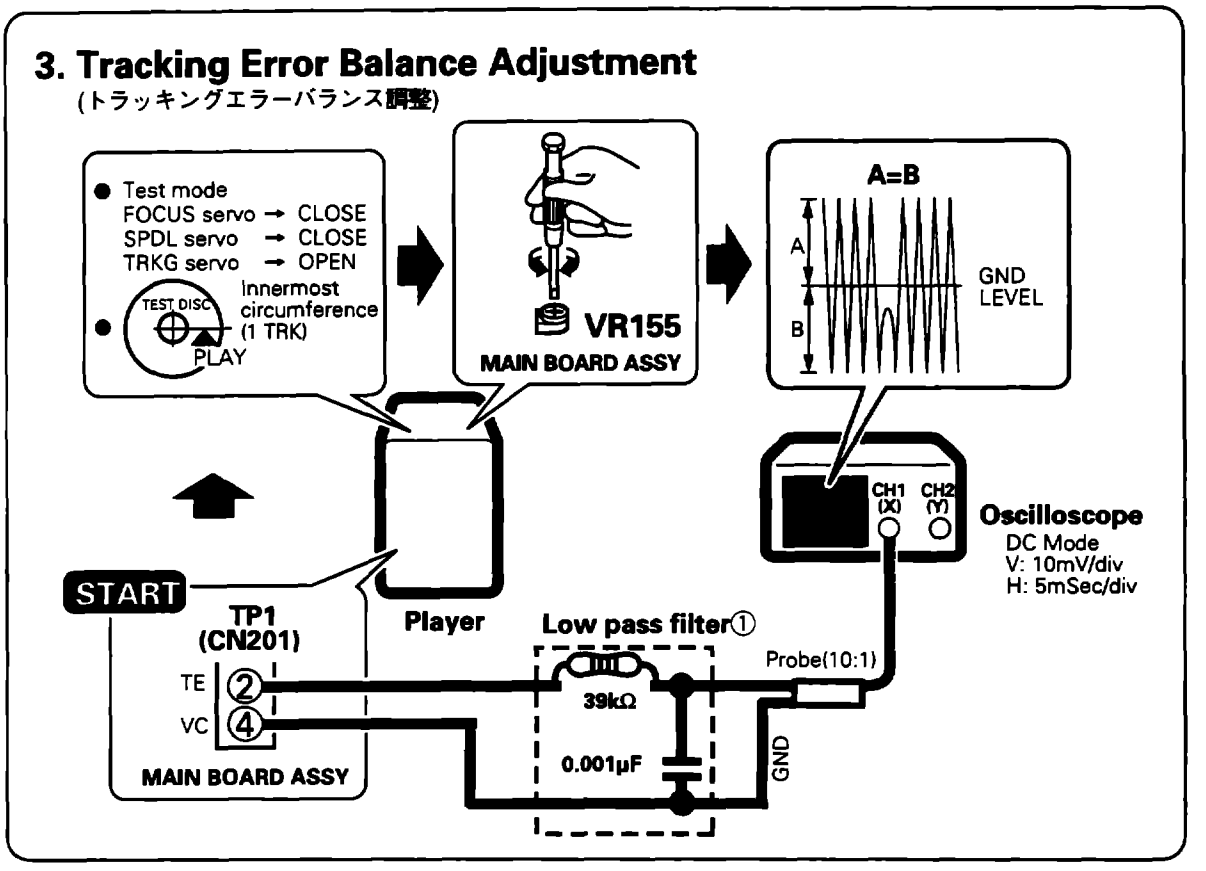


6.3 Check and Adjustment (確認、調整)

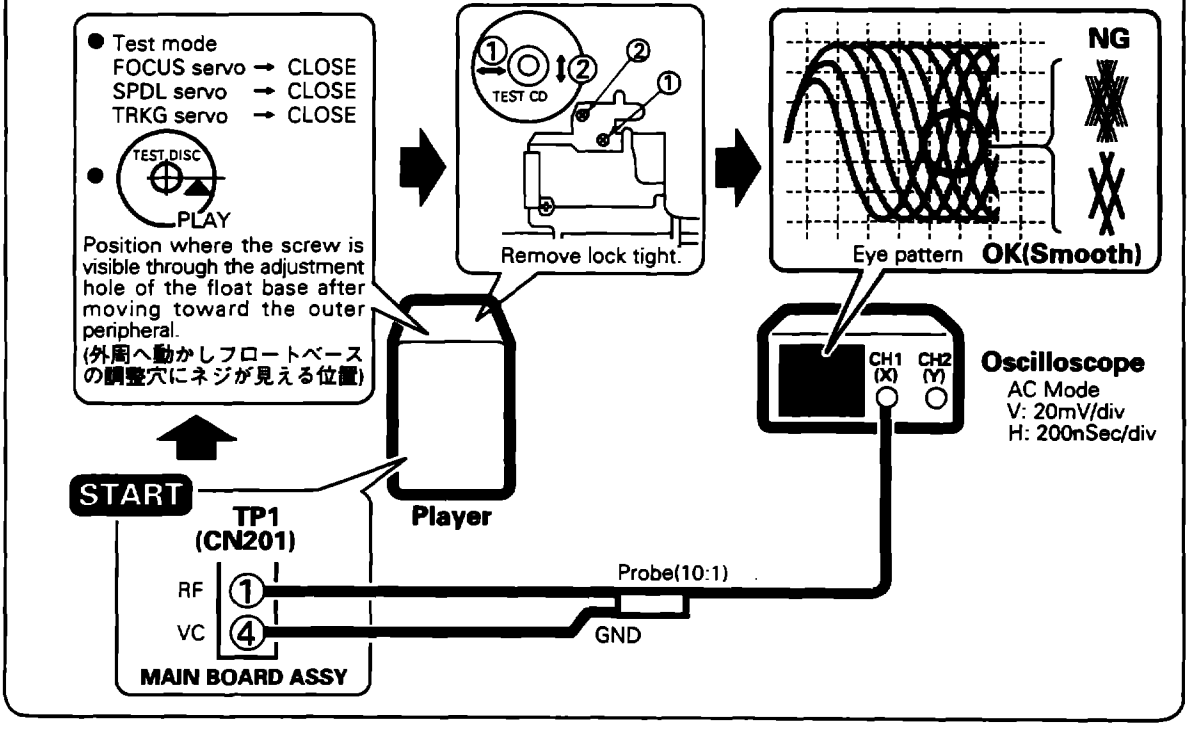




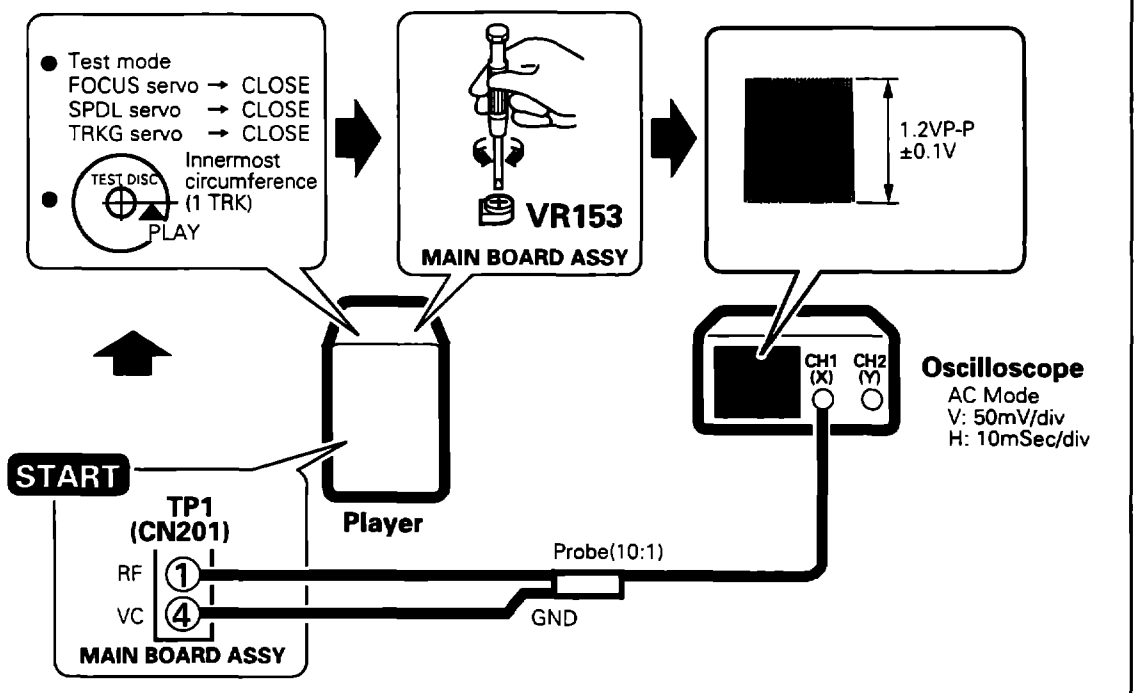
3. Tracking Error Balance Adjustment
(トラッキングエラーバランス調整)



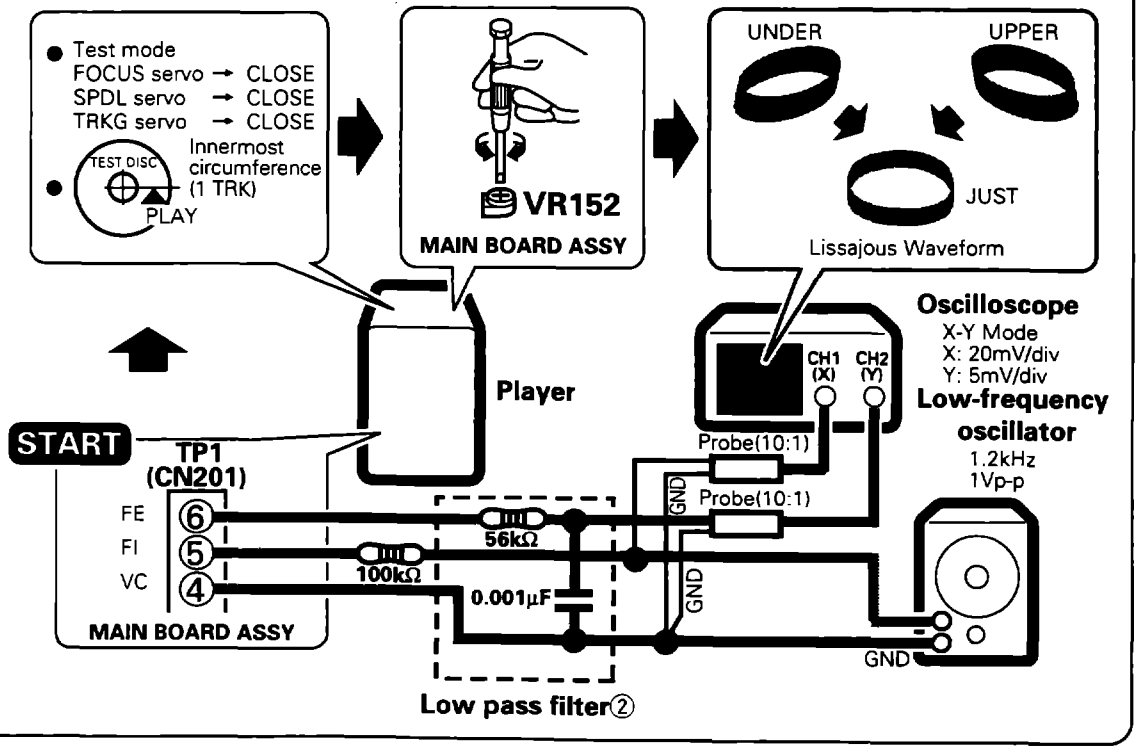
4. PICKUP ①RADIAL / ②TANGENTIAL DIRECTION TILT ADJUSTMENT
(ピックアップ①ラジアル方向②タンジェンシャル方向の傾き調整)



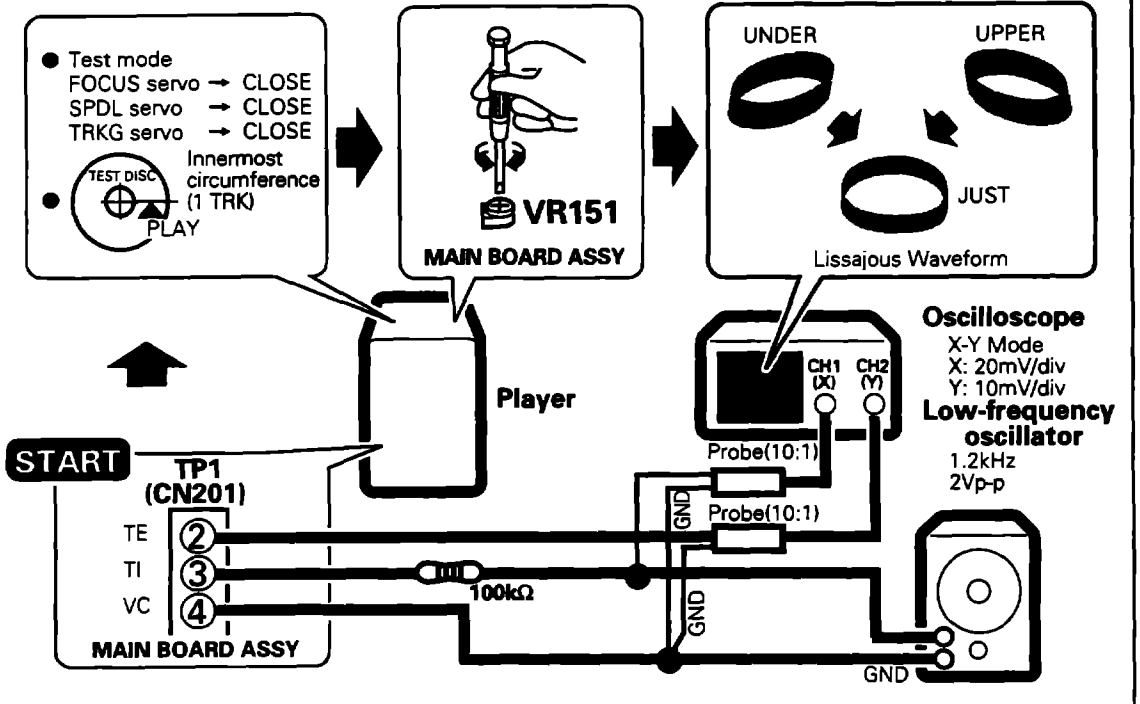
5. RF LEVEL ADJUSTMENT
(RFレベル調整)



6. Focus Servo Loop Gain Adjustment
(フォーカスサーボループゲイン調整)



7. Tracking Servo Loop Gain Adjustment
(トラッキングサーボループゲイン調整)



7. GENERAL INFORMATION

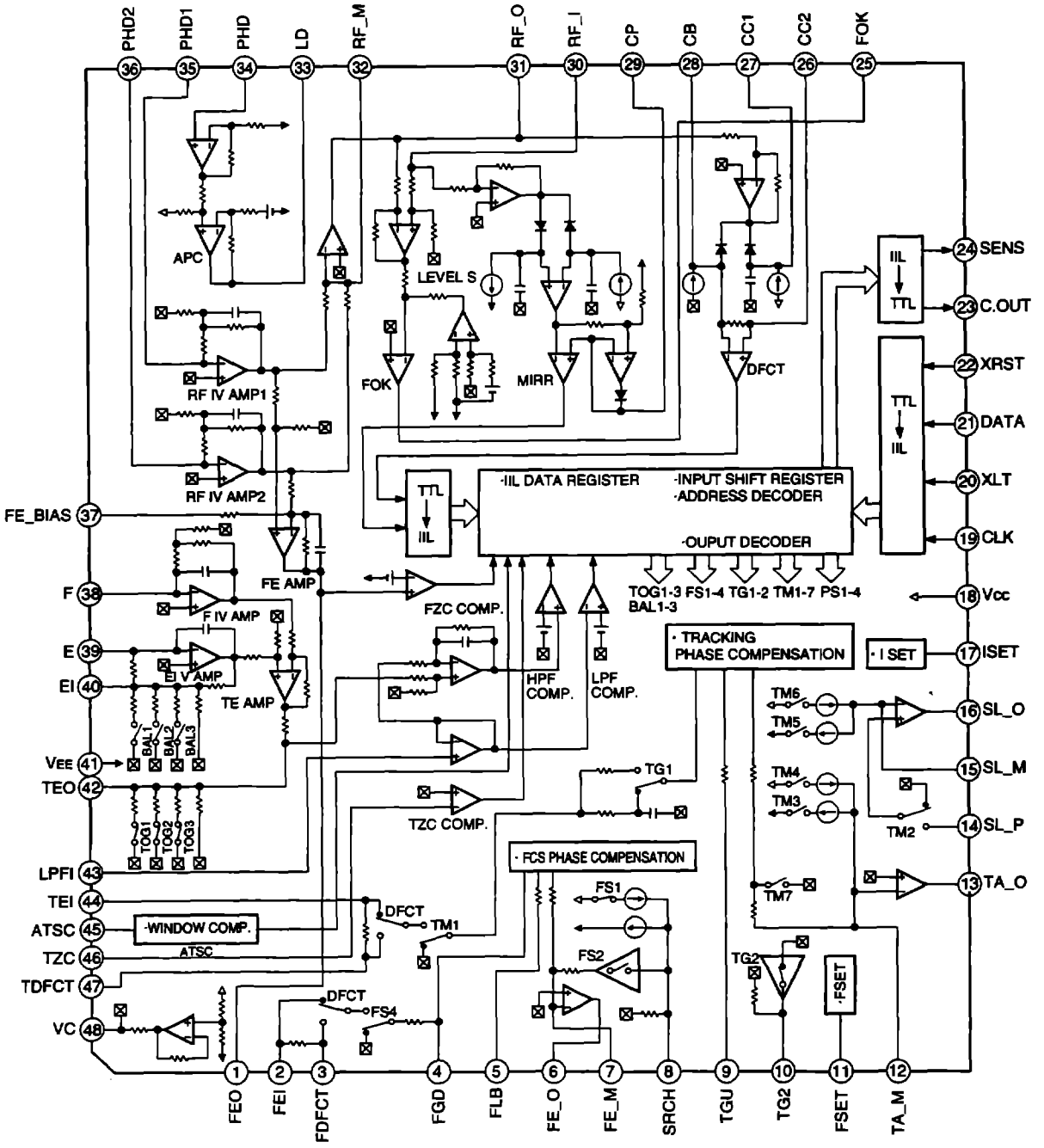
- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

7.1 PARTS

7.1.1 IC

■ CXA1782CQ (IC151:MAIN BOARD ASSY)

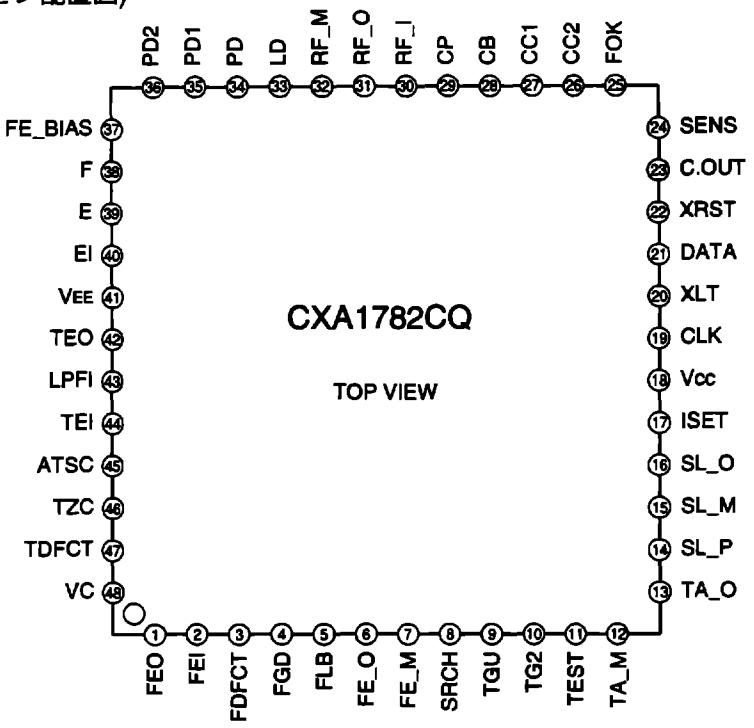
- **RF Signal Processing Servo Amplifier for CD players** (CD用RF信号処理サーボアンプ)
- **Block Diagram** (ブロックダイアグラム)



·The statuses of switches in the block diagram show when they are reset to their initial settings.
·The switch will be set to the ○ side when the value in the serial data truth table is "1" and to the ● side when the true value is "0".
·The DFCT switch is set to the ○ side if a defect signal is generated when the true value is DEFECT=E.
·The TG1 switch is set to the ○ side and the TG2 switch is set to "Open" when TG1 and TG2 (D3 of Address 1) are "1".

・ブロック図でのSWの状態はイニシャルリセット時を示します。
・シリアルデータ真理値表で1の時は○側,0の時は●側にスイッチがONします。
・DECTスイッチについては真理値DEFECT=Eの時,ディフェクト信号発生時に○側となります。
・TG1,TG2 SWはTG1,TG2 (アドレス1のD3)が"1"でTG1が○側,TG2がOpenになります。

● Pin Assignment (ピン配置図)



● Pin Function (端子機能)

CXA1782CQ

No.	Pin Name	I/O	Function	機能
1	FEO	O	Focus error amplifier output. Connected internally to the FZC comparator input.	フォーカス・エラーアンプの出力端子です。 内部でFZCコンパレータ入力に接続されています。
2	FEI	I	Focus error input.	フォーカス・エラーの入力端子です。
3	FDFCT	I	Capacitor connection pin for defect time constant.	ディフェクト時の時定数用コンデンサ接続端子です。
4	FGD	I	Ground this pin through a capacitor when decreasing the focus servo high-frequency gain.	フォーカス・サーボの高域ゲインを落とす場合,この端子をコンデンサで接地します。
5	FLB	I	External time constant setting pin for increasing the focus servo low-frequency.	フォーカス・サーボの低域持ち上げ用時定数外付け端子です。
6	FE_O	O	Focus drive output.	フォーカスドライブ出力です。
7	FE_M	I	Focus amplifier inverted input.	フォーカス・アンプの反転入力端子です。
8	SRCH	I	External time constant setting pin for generating focus servo waveform.	フォーカス・サーチ波形を作るための時定数外付け端子です。
9	TGU	I	External time constant setting pin for switching tracking high-frequency gain.	トラッキング高域ゲイン切り換え用時定数外付け端子です。
10	TG2	I	External time constant setting pin for switching tracking high-frequency gain.	トラッキング高域ゲイン切り換え用時定数外付け端子です。
11	FSET	I	High cut-off frequency setting pin for focus and tracking phase compensation amplifier.	フォーカス・トラッキングの位相補償のピーク設定用端子です。
12	TA_M	I	Tacking amplifier inverted input.	トラッキング・アンプの反転入力端子です。
13	TA_O	O	Tracking drive output.	トラッキングドライブ出力です。
14	SL_P	I	Sled amplifier non-inverted input.	スレッド・アンプの非反転入力端子です。
15	SL_M	I	Sled amplifier inverted input.	スレッド・アンプの反転入力端子です。
16	SLO	O	Sled drive output.	スレッドドライブ出力です。
17	ISET	I	Setting pin for Focus search, Track jump, and Sled kick current.	フォーカスサーチ、トラックジャンプ、スレッドキックの高さを決める電流を流します。
19	CLK	I	Serial data transfer clock input from CPU. (no pull-up resistance)	CPUからのシリアルデータ転送クロック入力です。(プルアップ抵抗無し)
20	XLT	I	Latch input from CPU. (no pull-up resistance)	CPUからのラッチ入力です。(プルアップ抵抗無し)

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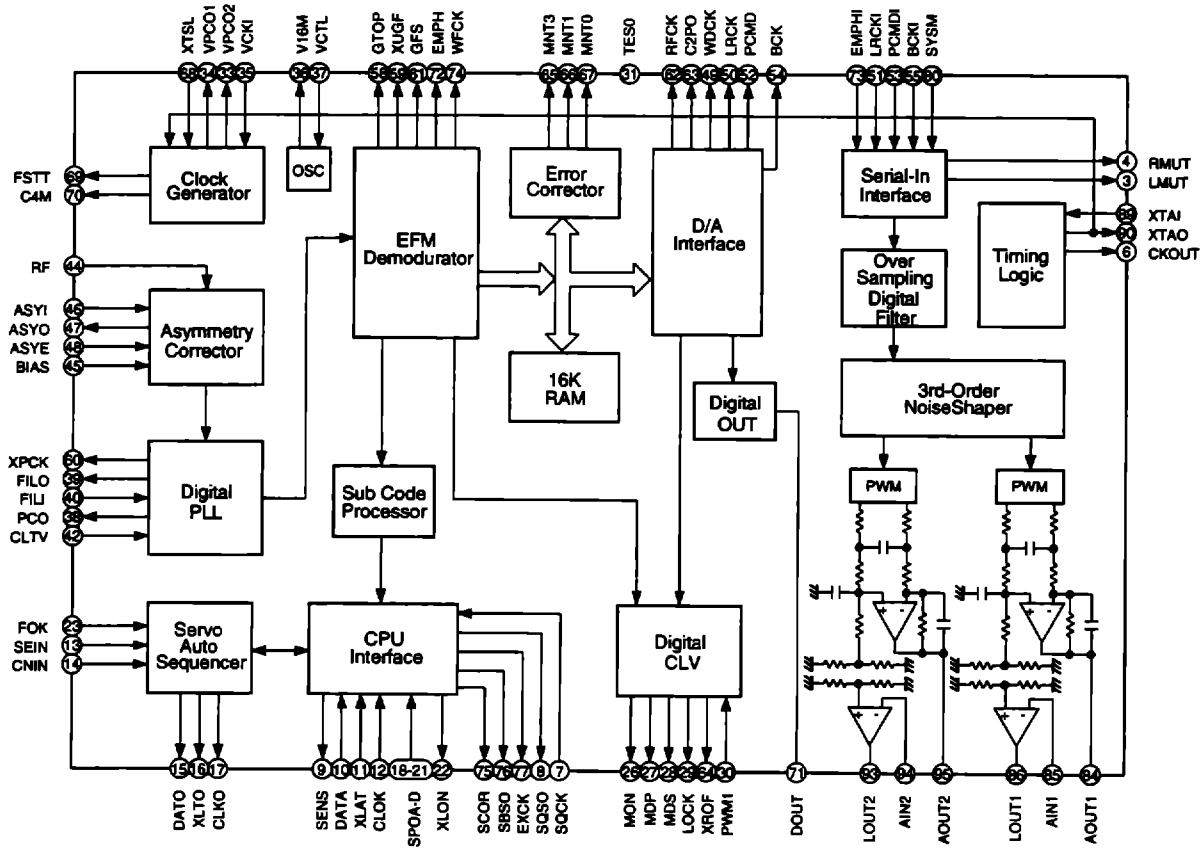
No.	Pin Name	I/O	Function	機能
21	DATA	I	Serial data input from CPU. (no pull-up resistance)	CPUからのシリアルデータ入力です。(プルアップ抵抗無し)
22	XRST	I	Reset input ; resets at Low. (no pull-up resistance)	リセット入力端子"L"でリセットします。(プルアップ抵抗無し)
23	C.OUT	O	Track number count signal output.	トラック数カウント用信号出力です。
24	SENS	O	Output FZC, DFCT, TZC, gain, balance, and others according to the command from CPU.	CPUからのコマンドにより, FZC, DFCT, TZC, Gain, BALなどを出力します。
25	FOK	O	Focus OK comparator output.	フォーカスOKコンパレータの出力端子です。
26	CC2	I	Input for the DEFECT bottom hold output with capacitance coupled.	DEFECTボトム・ホールド出力が容量統合されて入力される入力端子です。
27	CCI	O	DEFECT bottom hold output.	DEFECTボトム・ホールド出力端子です。
28	CB	I	Connection pin for DEFECT bottom hold capacitor.	DEFECTボトム・ホールドコンデンサ接続端子です。
29	CP	I	Connection pin for MIRR hold capacitor. MIRR comparator non-inverted input.	MIRRホールド・コンデンサの接続端子です。 MIRRコンパータの非反転入力端子です。
30	RF_I	I	Input for the RF summing amplifier output with capacitance coupled.	RFサミングアンプの出力が容量統合されている入力端子です。
31	RF_O	O	RF summing amplifier output. Eye-pattern check point.	RFサミングアンプの出力端子です。Eyeパターンのチェックポイントです。
32	RF_M	I	RF summing amplifier inverted input. The RF amplifier gain is determined by the resistance connected between this pin and RFO pin.	RFサミングアンプの反転入力端子です。この端子とRFO端子間に接続された抵抗でRFアンプのゲインが決まります。
33	LD	O	APC amplifier output.	APCアンプの出力端子です。
34	PHD	I	APC amplifier input.	APCアンプの入力端子です。
35 36	PHD1 PHD2	I I	RF I-V amplifier inverted input. Connect these pins to the photo diode A+C and B+D pins.	RFI-Vアンプの反転入力端子です。それぞれフォトダイオードのA+C, B+D端子に接続して電流入力で受けます。
37	FE_BIAS	I	Bias adjustment of focus error amplifier.	フォーカス・エラーアンプのバイアス調整用端子です。
38 39	F E	I I	FI-V and EI-V amplifier inverted input. Connect these pins to photo diodes F and E.	F, EのI-Vアンプの反転入力端子です。それぞれ,フォトダイオードのF, Eに接続して電流入力で受けます。
40	EI	-	I-V amplifier E gain adjustment. (When not using automatic balance adjustment)	I-VアンプEのゲイン調整用端子です。(BAL自動調整を使用しない時)
41	V_{EE}	-	V_{EE}	V_{EE}
42	TEO	O	Tracking error amplifier output. E-F signal is output.	トラッキング・エラーアンプの出力端子です。E-F信号が出力されます。
43	LPFI	I	Comparator input for balance adjustment. (Input from TEO through LPF)	BAL調整用コンパレータ入力端子です。(TEOからLPFを介して入力)
44	TEI	I	Tracking error input.	トラッキング・エラーの入力端子です。
45	ATSC	I	Window comparator input for ATSC detection.	ATSC検出用ウインドウコンパレータ入力端子です。
46	TZC	I	Tracking zero-cross comparator input.	トラッキング・ゼロクロスコンパレータの入力端子です。
47	TDFCT	I	Capacitor connection pin for defect time constant.	ディフェクト時の時定数用コンデンサ接続端子です。
48	VC	O	$(V_{CC}+V_{EE})/2$ DC voltage output.	$(V_{CC}+V_{EE})/2$の直流電圧出力端子です。

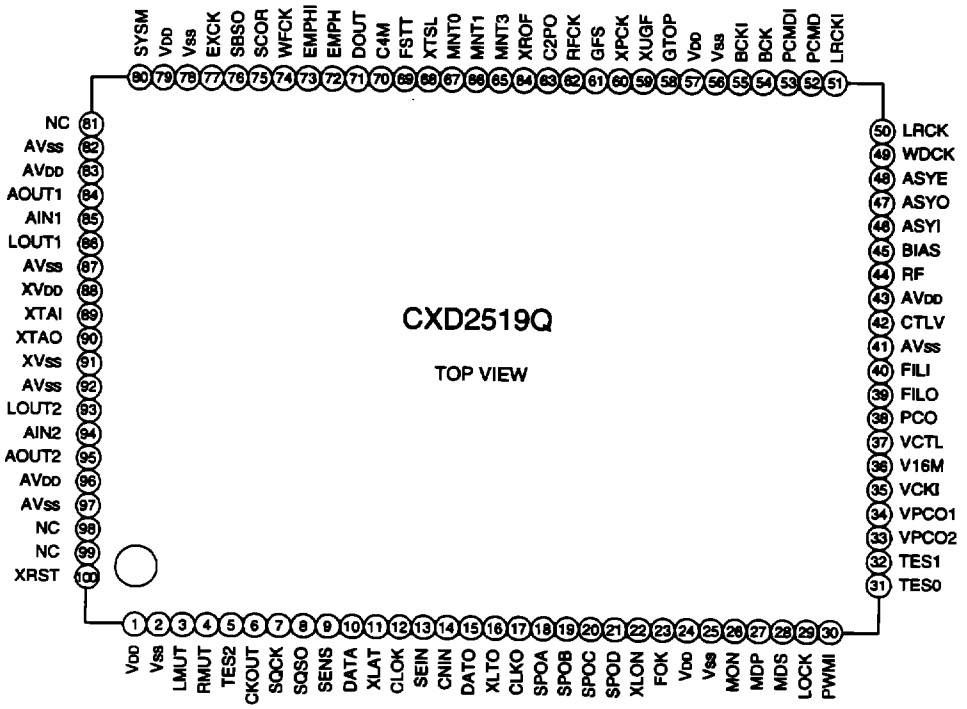
■ CXD2519Q (IC301 : MAIN BOARD ASSY)

● CD DIGITAL SIGNAL PROCESSOR (CD用デジタル信号処理)

● Block Diagram (ブロックダイアグラム)



● Pin Assignment (ピン配置図)



● Pin Function (端子機能) CXD2519Q

No.	Pin Name	I/O	Function	機能
1	V_{DD}	-	Power Supply (+5V).	電源(+5V)
2	Vss	-	GND	GND
3	LMUT	O	Left-channel zero detection flag.	Lch・"0"検出フラグ
4	RMUT	O	Right-Channel zero detecton flag.	Rch・"0"検出フラグ
5	TES2	O	TEST output pin ; normally open.	TEST用出力端子 通常オープン
6	CKOUT	O	Master clock frequency-divider output. Selects and outputs XTAI ×1,×1/2,×1/4 or low only.	マスタクロック分周出力端子 XTAIの×1,×1/2,×1/4,もしくは"L"のみを選択して出力
7	SQCK	I	SQSO readout clock input.	SQSOリード・アウト用クロック入力
8	SQSO	O	Sub Q 80-bit serial output.	SubQ 80bitのシリアル出力
9	SENS	O	SENS output to CPU.	SENS出力 CPUへ出力
10	DATA	I	Serial data input from CPU.	CPUよりシリアルデータ入力
11	XLAT	I	Latch input from CPU. Serial data is latched at the falling edge.	CPUよりラッチ入力 立ち下がりでシリアルデータをラッチ
12	CLOK	I	Serial data transfer clock input from CPU.	CPUよりシリアルデータ転送クロック入力
13	SEIN	I	SENS input from SSP.	SSPよりセンス入力
14	CNIN	I	Track jump count signal input.	トラックジャンプ数カウント信号入力
15	DATO	O	Serial data output to SSP.	SSPへシリアルデータ出力
16	XLTO	O	Serial data latch output to SSP. Latched at the falling edge.	SSPへシリアルデータラッチ出力 立ち下がりでラッチ
17	CLKO	O	Serial data transfer clock output to SSP.	SSPへシリアルデータ転送クロック出力
18	SPOA	I	Microcomputer extended interface (input A).	マイコン拡張インタフェース(入力A)
19	SPOB	I	Microcomputer extended interface (input B).	マイコン拡張インタフェース(入力B)
20	SPOC	I	Microcomputer extended interface (input C).	マイコン拡張インタフェース(入力C)
21	SPOD	I	Microcomputer extended interface (input D).	マイコン拡張インタフェース(入力D)
22	XLON	O	Microcomputer extended interface (output).	マイコン拡張インタフェース(出力)
23	FOK	I	Focus OK input. Used for SENS output and the servo auto sequencer.	フォーカスOK入力端子 SENS出力とサーボ・オートシーケンサに使用
24	VDD	-	Power supply (+5V).	電源(+5V)
25	Vss	-	GND.	GND
26	MON	O	Spindle motor on/off control output.	スピンドルモータのON/OFFコントロール出力
27	MDP	O	Spindle motor servo control.	スピンドルモータのサーボ制御
28	MDS	O	Spindle motor servo control.	スピンドルモータのサーボ制御
29	LOCK	O	GFS is sampled at 460Hz;When GFS is high, this pin outputs a high signal. If GFS is low eight consecutive samples, this pin outputs low.	GFSを460Hzでサンプリングし，GFSがHの時，H出力 8回連続Lの場合L出力
30	PWMI	I	Spindle motor external ontrol input.	スピンドルモータの外部制御入力
31	TES0	I	TEST pin ; normally GND.	TEST用端子 通常GND
32	TES1	I	TEST pin ; normally GND.	TEST用端子 通常GND
33	VPCO2	O	Wide-band EFM PLL charge pump output. Turned on/off by FCSW of address E.	広帯域EFM PLL用チャージポンプ出力 アドレスEのFCSWにてON/OFF
34	VPCO1	O	Charge pump output for wide-band EFM PLL.	広帯域EFM PLL用チャージポンプ出力
35	VCKI	I	VCO2 oscillation input for the wide-band EFM PLL.	広帯域EFM PLL用VCO2発振入力
36	V16M	O	VCO2 oscillation output for the wide-band EFM PLL.	広帯域EFM PLL用VCO2発振出力
37	VCTL	I	VCO2 controll voltage input for the wide-band EFM PLL.	広帯域EFM PLL用VCO2コントロール電圧入力
38	PCO	O	Master PLL charge pump output.	マスタPLL用チャージポンプ出力
39	FILO	O	Master PLL (slave=digital PLL)filter output.	マスタPLL用(スレーブ=デジタルPLL)フィルタ出力
40	FILI	I	Master PLL filter input.	マスタPLL用フィルタ入力

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No.	Pin Name	I/O	Function	機能
41	AVSS	-	Analog GND.	アナログGND
42	CLTV	I	Master VCO control voltage input.	マスタ用VCOコントロール電圧入力
43	AVDD	-	Analog Power supply (+5V).	アナログ電源(+5V)
44	RF	I	EFM signal input.	EFM信号入力
45	BIAS	I	Constant current input of the asymmetry circuit.	アシンメトリー回路定電流入力
46	ASYI	I	Asymmetry comparator voltage input.	アシンメトリーコンパレート電圧入力
47	ASYO	O	EFM full-swing output (low=Vss, high=VDD).	EFMフルスイング出力(L=Vss, H=VDD)
48	ASYE	I	Low:asymmetry circuit off; high:asymmetry circuit on	L:アシンメトリー回路OFF H:アシンメトリー回路ON
49	WDCK	O	D/A interface. Word clock f=2fs	D/Aインタフェース ワードクロックf=2Fs
50	LRCK	O	D/A interface. LR clock output f=fs	D/Aインタフェース LRクロック出力f=Fs
51	LRCKI	I	LR clock input.	LRクロック入力
52	PCMD	O	D/A interface.Serial data output (two's complememt, MSB first).	D/Aインタフェース シリアルデータ出力 (2's COMP, MSBファースト)
53	PCMDI	I	D/A interface.Serial data input (two's complement, MSB first).	D/Aインタフェース シリアルデータ入力 (2's COMP, MSBファースト)
54	BCK	O	D/A interface.Bit clock output.	D/Aインタフェース ビットクロック出力
55	BCKI	I	D/A interface.Bit clock input.	D/Aインタフェース ビットクロック入力
56	Vss	-	GND.	GND
57	VDD	-	Power supply (+5V).	電源(+5V)
58	GTOP	O	GTOP output.	GTOP出力
59	XUGF	O	XUGF output.	XUGF出力
60	XPCK	O	XPLCK output.	XPLCK出力
61	GFS	O	GFS output.	GFS出力
62	RFCK	O	RFCK output.	RFCK出力
63	C2PO	O	C2PO output.	C2PO出力
64	XROF	O	XRAOF output.	XRAOF出力
65	MNT3	O	MNT3 output.	MNT3出力
66	MNT1	O	MNT1 output.	MNT1出力
67	MNT0	O	MNT0 output.	MNT0出力
68	XTSL	I	Crystal selector input. Low: 16.9344MHz;high:33.8688MHz.	X'tal選択入力端子 X'talが16.9344MHzの時L 33.8688MHzの時H
69	FSTT	O	2/3 frequency-divider output for Pins 89 and 90.	89, 90番端子の2/3分周出力
70	C4M	O	4.2336MHz Output. 1/4 frequency divided VCKI output in CAV-W mode.	4.2336MHz出力 CAV-Wモード時はVCKIの1/4分周が出力
71	DOUT	O	Digital Out output.	Digital Out出力端子
72	EMPH	O	Outputs a hiqh signal when the playback disc has emphasis, and a low signal when there is no emphasis.	再生Discがエンファシス有りの時H出力 無しの時L出力
73	EMPHI	I	Inputs a high signal when de-emphasis is on, and a low signal when de-emphasis is off.	ディエンファシスONの時H入力 OFFの時L入力
74	WFCK	O	WFCK output.	WFCK出力
75	SCOR	O	Outputs a high signal when either subcode sync S0 or S1 is detected.	サブコードシンクS0かS1どちらか検出された時H出力
76	SBSO	O	Sub P to W serial output.	SubP Wのシリアル出力
77	EXCK	I	SBSO readout clock input.	SBSOリード・アウト用クロック入力
78	Vss	-	GND.	GND
79	VDD	-	Power supply (+5V).	電源(+5V)
80	SYSM	I	Mute input. Active when high.	ミュート入力端子 "H"の時アクティブ

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No.	Pin Name	I/O	Function	機能
81	NC	-	————	————
82	AVss	-	Analog GND.	アナログGND
83	AVDD	-	Analog power supply (+5V).	アナログ電源(+5V)
84	AOUT1	O	Left-channel analog output.	Lch・アナログ出力端子
85	AIN1	I	Left-channel operational amplifier input.	Lch・OPAMP入力端子
86	LOUT1	O	Left-channel LINE output.	Lch・LINE出力端子
87	AVss	-	Analog GND.	アナログGND
88	XVDD	-	Power supply for master clock.	マスタクロック用電源
89	XTAI	I	Crystal oscillation circuit input. Input the external master clock via this pin.	水晶発振回路入力端子 マスタクロックを外部から入力する場合この端子から入力
90	XTAO	O	Crystal oscillation circuit output.	水晶発振回路出力端子
91	XVss	-	GND for master clock.	マスタクロック用GND端子
92	AVss	-	Analog GND.	アナログGND
93	LOUT2	O	Right-channel LINE output.	Rch・LINE出力端子
94	AIN2	I	Right-channel operational amplifier input.	Rch・OPAMP入力端子
95	AOUT2	O	Right-channel analog output.	Rch・アナログ出力端子
96	AVDD	-	Analog power supply (+5V).	アナログ電源(+5V)
97	AVss	-	Analog GND.	アナログGND
98	NC	-	————	————
99	NC	-	————	————
100	XRST	I	System reset. Reset when low.	システムリセットLでリセット

Notes)
- PCMD is an MSB first, tow's complement output.
- GTOP is used to monitor the frame sync protection status.(High:sync protection window released.)
- XUGF is the negative pulse for the frame sync derived from the EFM signal. It is the signal before Sync protection.
- XPLCK is the inverse of the EFM PLL clock. The PLL is designed so that the falling edge of XPLCK and the EFM signal transition point coincide.
- GFS goes high when the frame sync and the insertion protection timing match.
- RFCK is derived with the crystal accuracy. This signal has a sycle of 136 μ s(during normal-speed.)
- C2PO represents the data error status.
- XRAOF is genarated when the 16K RAM exceeds the ±4F jitter margin.

注)
- PCMDは，MSBファーストの2'sコンプリメント出力です。
- GTOPは，Frame syncの保護状況をモニタするものです。(H:シンク保護ウィンドウ開放)
- XUGFは，EFM信号から得られたFrame syncで，ネガティブパルスです。シンク保護前の信号。
- XPLCKは，EFM PLLのクロックの反転。立ち下がりエッジとEFM信号の辺か点が，合うようにPLLが作られています。
- GFSは，Frame syncと内挿タイミングが一致した時Hとなる信号です。
- RFCKは，X'tal精度で作られる136 μ 周期の信号(通常速時)です。
- C2POは，Dataのエラー状態を表す信号です。
- XRAOFは，16K RAMが，±4Fのジッターマージンを超えた時，発生する信号です。

■ PD4817A (IC351:MAIN BOARD ASSY)

● SYSTEM CONTROL μCOM (システムコントロールマイコン)

● Pin Function (端子機能)

No.	Pin Name	I/O	Function	機能
1	DG3	O	FL driving DIGIT output.	FL駆動用 DIGIT 出力
2	DG4	O		
3	DG6	O		
4	DG7	O		
5	DG9	O		
6	DG10	O		
7	DG11	O		
8	VDD	+5V	+5V	+5V
9	CLOK	O	Serial clock.	シリアル クロック
10	MDAT	O	LSI control data serial output.	LSI 制御データ シリアル出力
11	SQSO	I	Q data serial input.(for FCOK, GFS, SENS)	Qデータ シリアル入力(FCOK/GFS/SENS兼用)
12	MOPN	O	Door motor output. Open (MOPN : H, MCLS : L) Close (MOPN : H, MCLS : H) Stop (MOPN : L, MCLS : L)	ドア モーター出力 開(MOPN : H, MCLS : L) 閉(MOPN : H, MCLS : H) 停(MOPN : L, MCLS : L)
13	MCLS	O		
14	NC	O	NC(OPEN)	未使用(OPEN)
15	NC	O		
16	NC	O		
17	$\overline{\text{RESET}}$	I	CPU Reset. (L : reset)	CPU リセット (L : リセット)
18	$\overline{\text{OPEN}}$	I	Door open/close SW input. Open ($\overline{\text{CLS}}$: H, $\overline{\text{OPEN}}$: L)	ドア開閉SW入力 開($\overline{\text{CLS}}$: H, $\overline{\text{OPEN}}$: L)
19	$\overline{\text{CLS}}$	I	Close ($\overline{\text{CLS}}$: L, $\overline{\text{OPEN}}$: H)	閉($\overline{\text{CLS}}$: L, $\overline{\text{OPEN}}$: H)
20	AVSS	GND	GND	GND
21	LOUT	O	Output for loading motor. IN (LIN : H, LOUT : L) OUT (LIN : L, LOUT : H) Stop (LIN : L, LOUT : L)	ローディング モーター用出力 IN (LIN : H, LOUT : L) OUT (LIN : L, LOUT : H) 停止(LIN : L, LOUT : L)
22	LIN	O		
23	DSRT	O	Selector output. Count up (DSRT : L, DSLT : H) Count down (DSRT : H, DSLT : L) Stop (DSRT : L, DSLT : L)	セレクター出力 カウントアップ(DSRT : L, DSLT : H) カウントダウン(DSRT : H, DSLT : L) 停止中(DSRT : L, DSLT : L)
24	DSLT	O		
25	$\overline{\text{INSD}}$	I	Slider INSDE SW input. (L : INSIDE)	スライダーINSIDE SW入力 (L : INSIDE)
26	$\overline{\text{EJCT}}$	I	Lauding out SW input. (L : Lauding out end)	ローディングアウト SW入力 (L : ローディングアウト完)
27	$\overline{\text{CLMP}}$	I	Clamp SW. (L : Clamped)	クランプ SW (L : クランプ完)
28	LDON	O	Laser diode output. (H : ON, L : OFF)	レーザー ダイオード 出力 (H : ON, L : OFF)
29	AVDD	+5V	+5V	+5V
30	AVREF	GND	GND	GND
31	NC	I	GND	GND
32	XT2	-	NC (OPEN)	未使用(OPEN)
33	VSS	GND	GND	GND
34	X1		Crystal connection for system clock oscillation :4.19MHz	システムクロック発振子接続端子4.19MHz
35	X2			
36	DCNT	I	Disc count pulse input.	ディスク カウント パルス入力
37	DPOS	I	Photo sensor input for disc position detection.	ディスク位置検出用 フォトセンサー入力
38	NC	O	NC (OPEN)	未使用(OPEN)
39	$\overline{\text{XLAT}}$	O	LSI control data latch pulse output.	LSI制御データ ラッチパルス出力
40	$\overline{\text{XRST}}$	O	Reset input for each LSI	各LSI用 リセット出力
41	$\overline{\text{DLAT}}$	O	DAC control data latch pulse output.	DAC制御データ ラッチパルス出力
42	SYC1	I	Synchronous input. (pull-up required)	シンクロ入力(要プルアップ)
43	SYC3	O	Synchronous output. (Expansion)	シンクロ出力 (増設)
44	CNIN	I	C.OUT input.	C.OUT入力
45	STTR	I	Trigger input for stand-by (During normal operation:L)	スタンバイ用 トリガー入力 (通常動作時:L)
46	SCOR	I	Subcode sync S0+S1 input.	サブコード シンク S0+S1入力
47	RMDT	I	Remote control data input. (Expansion)	リモコンデータ入力 (増設)
48	IC	GND	GND	GND
49	MUTE	O	Muting output. (H : MUTE)	ミューティング出力(H : MUTE)

PD4817A

No.	Pin Name	I/O	Function	機能
50	QSEL	O	Signal output for QDATA determination (H : During output of QDATA)	QDATA判別用信号出力 (H : QDATA出力中)
51	TRCH	O	Data serial output for expansion. (Expansion)	増設用 データ シリアル出力 (増設)
52	VDD	+5V	+5V	+5V
53	MUTB	O	Muting output. (L : MUTE)	ミューティング出力 (L : MUTE)
54	STBL	O	Output for STANDBY-LED/$\overline{\text{OSCE}}$	STANDBY-LED/$\overline{\text{OSCE}}$ 兼用出力
55	NC	O	NC (OPEN)	未使用(OPEN)
56	LED6	O	Output for LED6.	LED6用 出力
57	KD3	I	Key data input.	キー・データ 入力
58	KD2	I		
59	KD1	I		
60	KD0/TEST	I	Key data input./TEST mode request input. (H : TEST, L : Normal mode)	キー・データ 入力/TESTモード要求入力 (H : TEST, L : 通常モード)
61	NC	O	NC(OPEN)	未使用(OPEN)
62	NC	O		
63	NC	O		
64	NC	O		
65	SEG N	O	FL driving segment output.	FL駆動用 セグメント出力
66	SEG M	O		
67	SEG K	O		
68	SEG J	O		
69	SEG H	O		
70	SEG G	O		
71	VLOAD	-26V	-26V	-26V
72	SEG F	O	FL driving segment output.	FL駆動用 セグメント出力
73	SEG E	O		
74	SEG D	O		
75	SEG C	O		
76	SEG B	O		
77	SEG A	O		
78	NC	O	NC (OPEN)	未使用(OPEN)
79	DG1	O	FL driving DIGIT output.	FL駆動用 DIGIT 出力
80	DG2	O	FL driving DIGIT output.	FL駆動用 DIGIT 出力

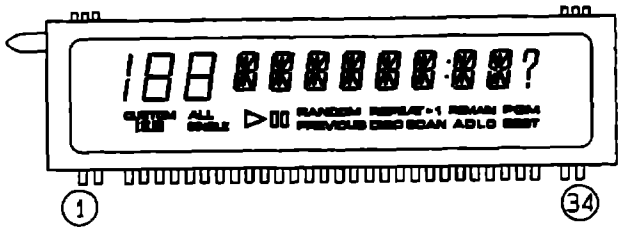
NOTE) H : High level, L : Low level, - : High IMP.

7.1.2 DISPLAY

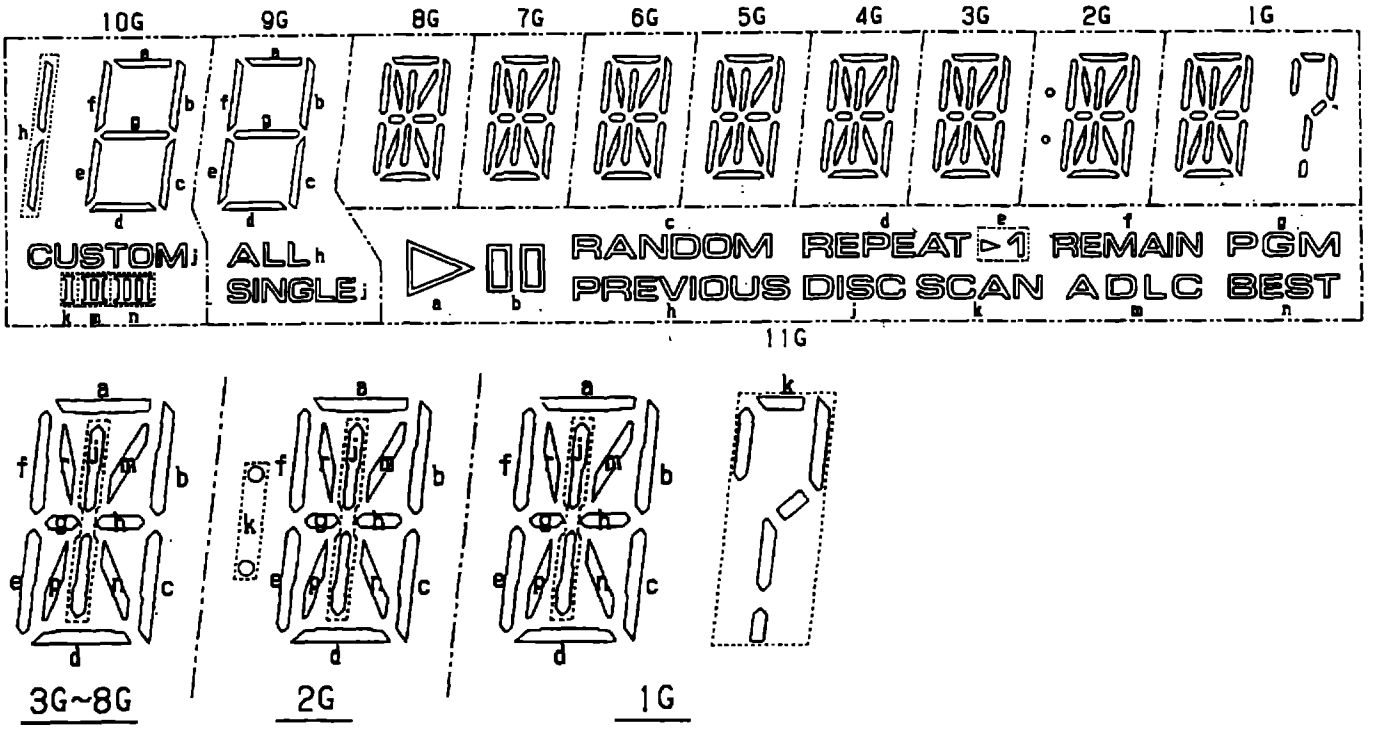
■ **PEL1089 (V701 : DISPLAY BOARD ASSY)**

● **FL TUBE**

PIN ASSIGNMENT



ANODE GRID ASSIGNMENT



PIN CONNECTION

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Connection	F	F	NP	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NL	NL	NL	p	r	a

Pin No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Connection	b	c	d	e	f	g	h	j	k	m	n	NP	F	F

F:Filament 1G~11G:Grid a~h, j, k, m, n, p, r:Anode NP:No Pin NL:No Lead

7.2 DIAGNOSIS

7.2.1 ERROR CODE DISPLAY

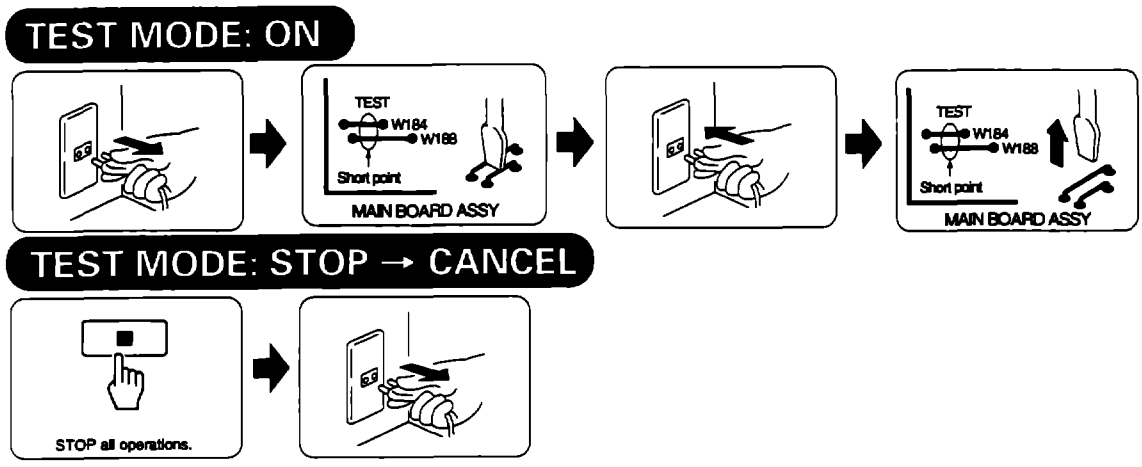
If a failure occurs in the Loading mechanism, the error symbol is automatically displayed on the fluorescent display screen of the front panel.

7.2.2 ERROR HISTORY AND DISPLAY

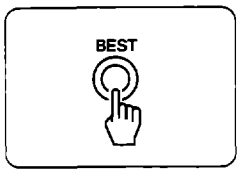
Error history display in test mode

The previously generated errors (NG processing) can be confirmed in the test mode. Since the has a backup function, the error history is memorized even if the power is turned off. (Memory holding time : About two days)

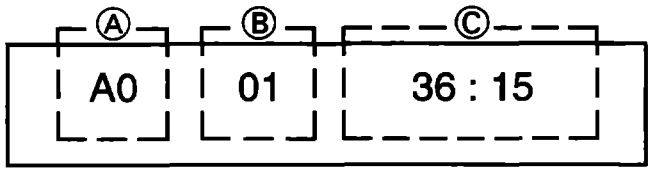
■ Put the unit into the test mode.



■ Press the "BEST" button of the keys on the main body.



An error appears on the fluorescent indicator display by the above operation.
Example)



Ⓐ Disc No. : Error code
Ⓑ Track No. : Error sequence
Ⓒ Minute:second No. : Error generation mode
(Only 10's digit is valid.)

The previously generated 16 error codes (maximum) can be memorized. These error codes are displayed one at a time in the ascending order by pressing the "BEST" button again.

Note : A product performs fail safe operation when an error occurs. At that time, an error code is memorized by the fail safe operation after the error is eliminated.

7.2.3 ERROR HISTORY DISPLAY

(1) Disc No. Ⓐ : Detail of error code at portion

<Note> The user display appears only when the normal operation cannot be returned even if the fail safe operation is executed after each error occurs.

User	display	Description
None	A0	• A disc couldn't be detected for playback after loading because; No disc existed. A disc was turned upside down. A disc was dirty. A disc was loaded incompletely. • The focus got out of place during playback due to the crack and stain on the disc.
None	A1	• The servo mechanism couldn't move to the desired tune position within a fixed time during selection of a tune from playback or during playback.
U1	A3	• A disc couldn't be loaded within a fixed time. (A disc couldn't be carried from the rack block.)
	A4	• A disc couldn't be unloaded within a fixed time. (A disc couldn't be returned to the rack block.)
U2	A2	• The LOADING mechanism couldn't move to the desired disc position within a fixed time during selection of a disc from playback or during playback start from stop.
	A5	• The LOADING mechanism couldn't be forcibly returned to the home position (left position when viewed from the front) within a fixed time after it is initialized or becomes NG.
None	A6	• A disc couldn't be normally rotated for playback after loading because; A disc was turned upside down. A disc was dirty A disc was loaded incompletely. • A disc couldn't be normally rotated during playback due to the crack and stain on the disc.

User	display	Description
None	A7	• Mechanism position just before the LOADING mechanism shifts to the disc selection operation when the DCNT pin is low. (The DCNT pin is usually high when the LOADING mechanism is in the stop state. The mechanism position is thus judged to have been shifted for some reason. The shifted mechanism position may cause a failure.)
None	A8	• Discrepancy has occurred between the detected disc position and the current disc position during movement of the loading mechanism. (The system may incorrectly counted the waveforms of the DCNT and DPOS terminals. If counting is incorrect, the position of the disc No. displayed does not match the disc position counted.)
None	A9	• Mechanism position during disc loading when the DCNT pin is low. (The DCNT pin is usually high when the LOADING mechanism is in the stop state. The mechanism position is thus judged to have been shifted for some reason. The shifted mechanism position may cause a failure.)
None	AA	• The pickup block cannot return to the innermost circumference when the playback is Completed or another disc is shifted.

Hood section

User	display	Description
U3	P0	The hood did not open within the specified time. The switch of the hood was malfunctioning.
	P1	The hood did not close within the specified time. The switch of the hood was malfunctioning.
	P2	The hood was attempted to be opened with force when it was completely closed. The switch of the hood was malfunctioning.

(2) Track No. Ⓑ : Error sequence in portion

The display of 1 to 16 appears. The low number indicates the recently generated error. The error whose number is "1" was generated most recently.

(3) Minute : Second No. Ⓒ : Detail of error generation mode in portion

Indicates the internal mode in which the displayed error is generated. The upper digit in "minute : second" has the meaning.

Digit of minute		Digit of second	
Display	Contents	Display	Contents
0 *	Spindle stop operation	0 *	During closing of the hood and when the hood is completely close
1 *	Disc return operation		
2 *	Disc selection operation		
3 *	Setup operation	1 *	During opening of the hood and when the hood is completely open
4 *	CD-R setup operation		
5 *	TOC read		
6 *	Track search operation		
7 *	Play		
8 *	Pause		
9 *	Manual search		

7.2.4 DISASSEMBLY

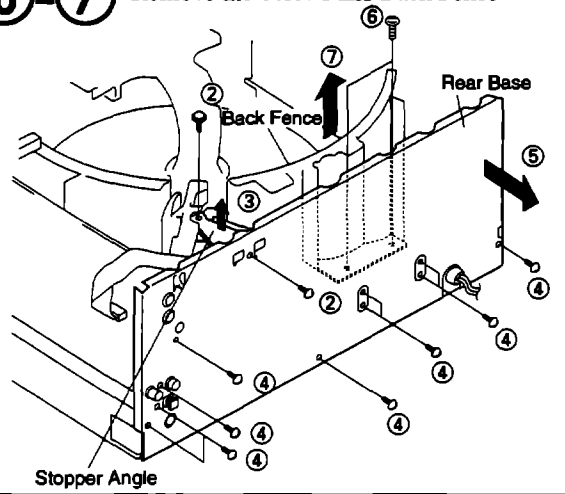
■ REMOVING THE LOADING MECHANISM ASSY

① Remove the Bonnet.

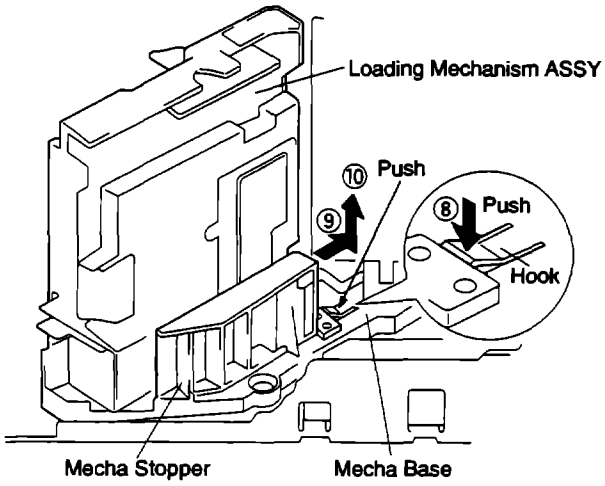
②-③ Remove the Screws and Stopper Angle.

④-⑤ Remove the Screws and Rear Base.

⑥-⑦ Remove the Screws and Back Fence.

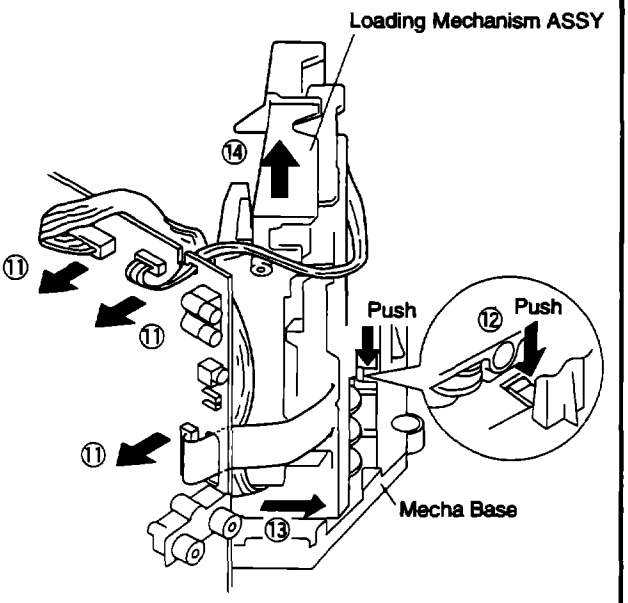


⑧-⑩ While holding down the hook of the Mecha Base, slide the Mechanism Stopper toward the right to pull up and remove the Mecha Stopper.



⑪ Remove the each wire.

⑫-⑭ While holding down the hook of the Mecha Base, slide the Loading Mechanism Assy to pull up and remove the Loading Mechanism Assy.



■ REMOVING THE OPERATION PANEL

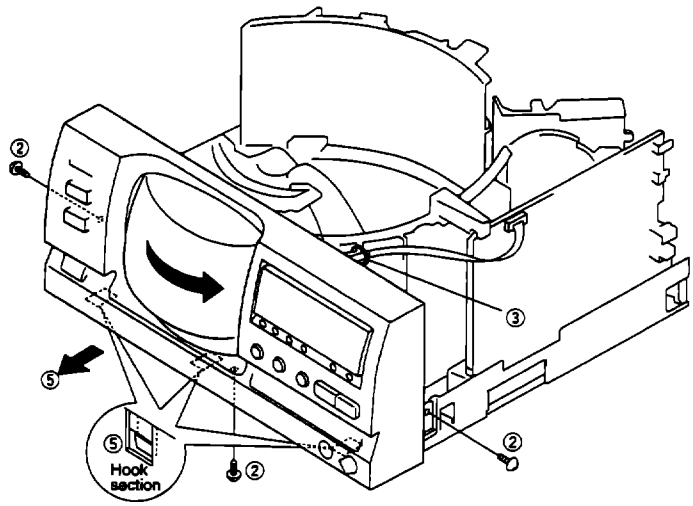
① Remove the Bonnet.

② Remove the Screws.

③ Cut the Binder securing the wire material.

④ Remove the Center Pole. (Refer to the "REMOVING THE DISC RACK")

⑤ Shift the Front Panel slightly toward you while paying attention to the back side hooks on the Chassis.

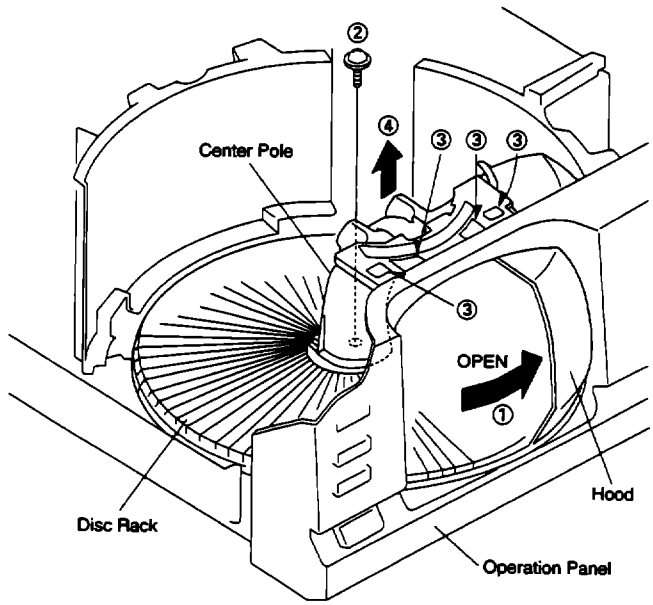


■ REMOVING THE DISC RACK

① Open the Hood.

② Remove the Screws.

③-④ Press the 4 hooks to remove the Center Pole from the Operation Panel.



■ REMOVE THE HOOD AND HOOD BASE

① Remove the Bonnet.

② Remove the Operation Panel. (Refer to the "REMOVING THE OPERATION PANEL")

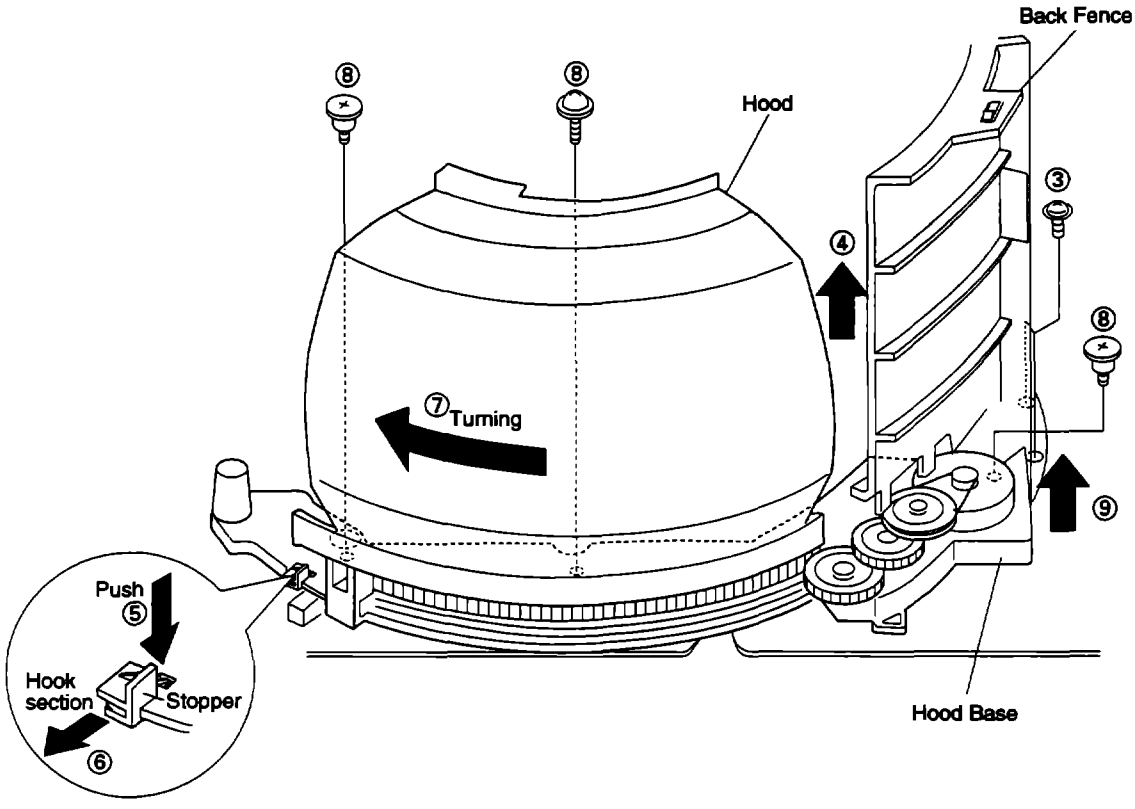
③ Remove the Screws.

④ Remove the Back Fence.

⑤-⑦ Press the hook of the Stopper of the Hood Base to remove the Stopper. Slide the Hood toward the left to remove the Hood.

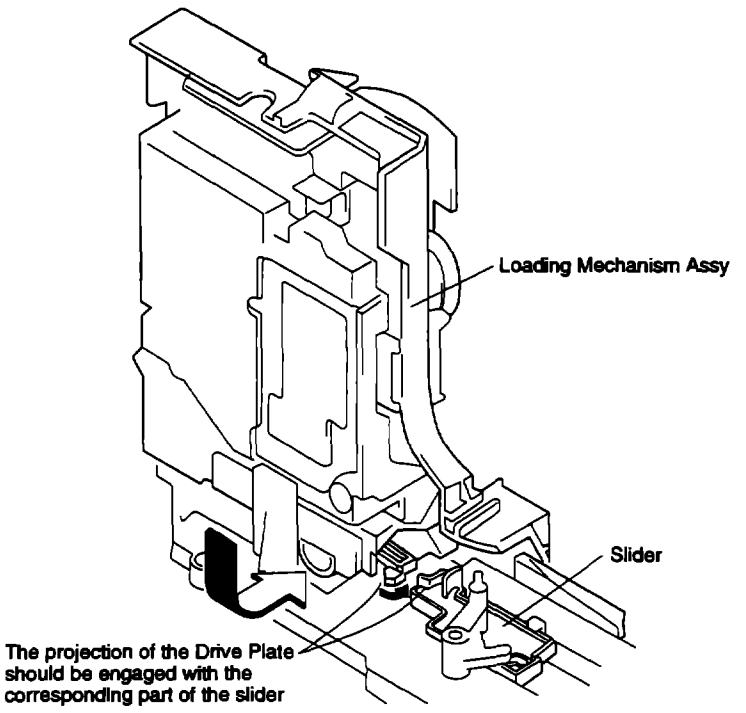
⑧ Remove the Screws.

⑨ Remove the Hood Base.



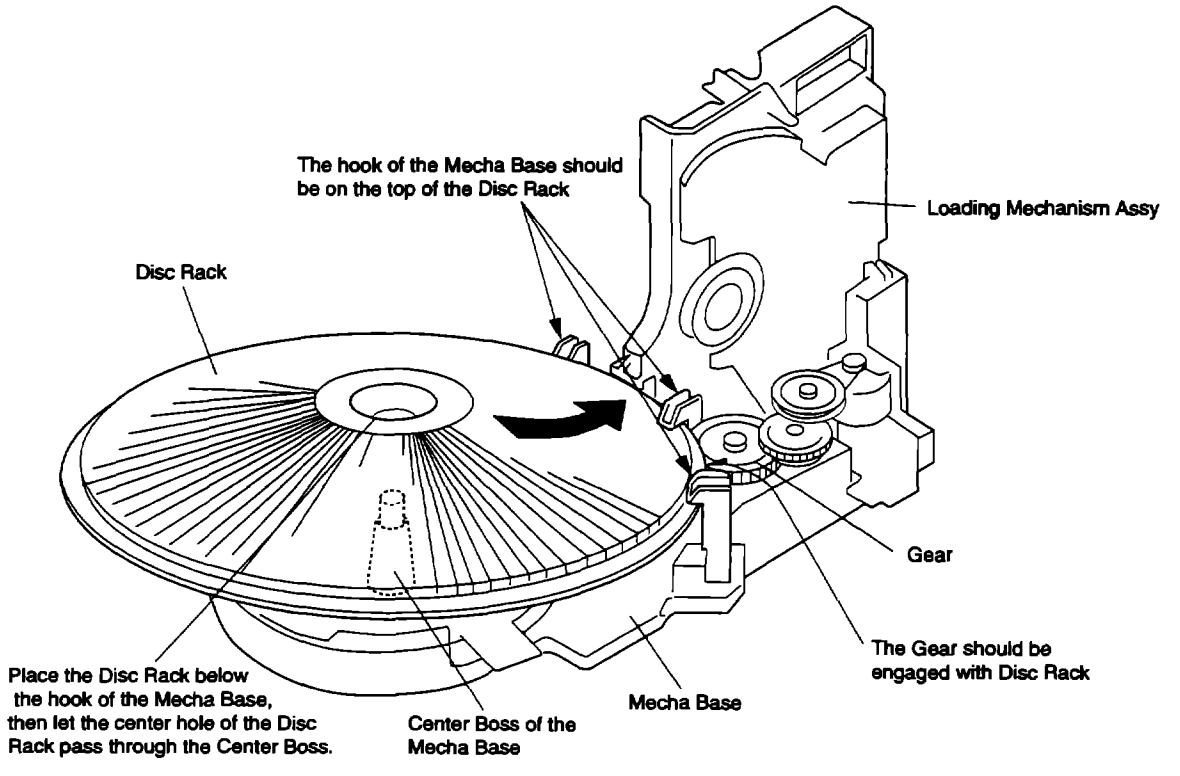
■ INSTALLING THE LOADING MECHANISM ASSY

①



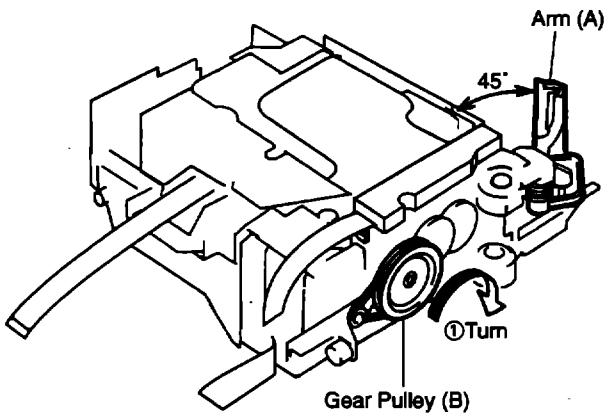
■ INSTALLING THE DISC RACK

①

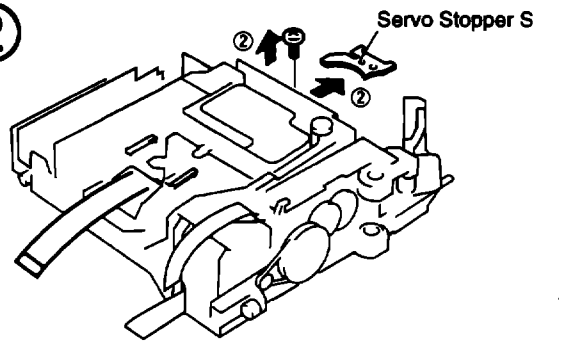


■ REMOVING THE SERVO MECHANISM ASSY GM

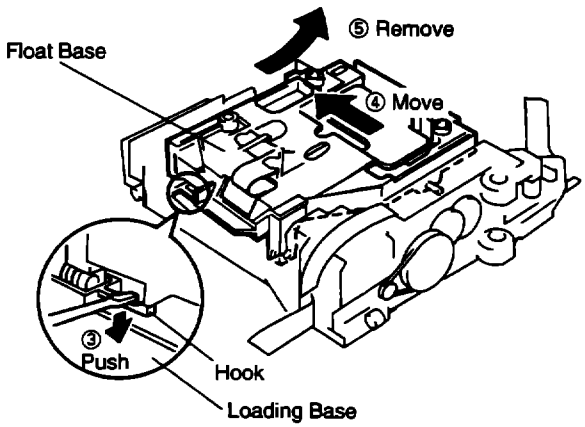
① Turn gear pulley (B) and position Arm (A) as shown below.



②

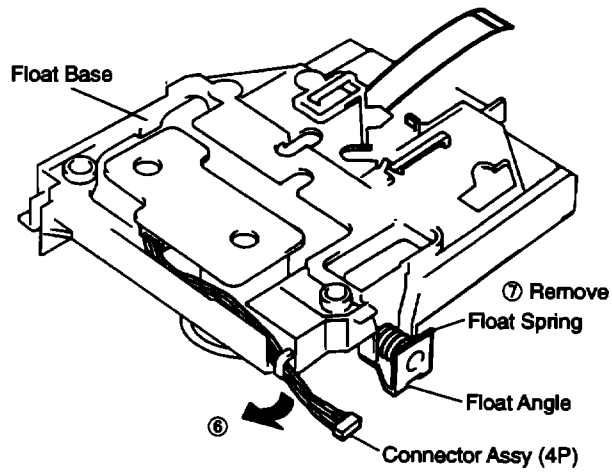


③-⑤ Slide the float base in the direction of the arrow ④ while pressing down on the loading base hook, and, lifting it gently, pull it out in the direction of the arrow ⑤.

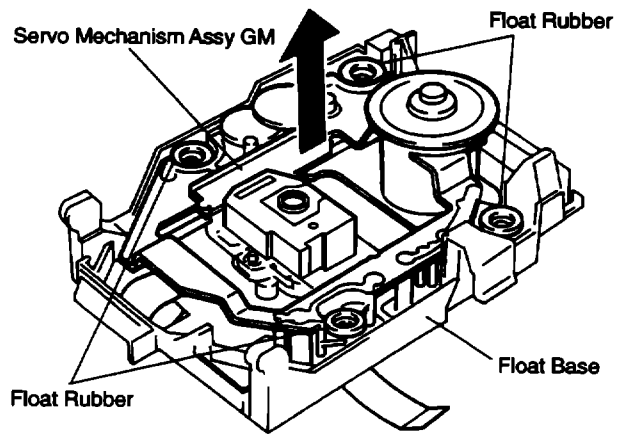


⑥ Remove the connector ASSY (4P) from the float base.

⑦ Remove the float spring. (To install this part, line up the float angle side of the Servo Mechanism ASSY GM first, and press down on the float base side.)



⑧ Remove the float rubber from the Servo Mechanism ASSY GM. At this time the float rubber should remain on the float base side. (To install it on the float base when it has been removed, push it into place with a thin cylindrical object.

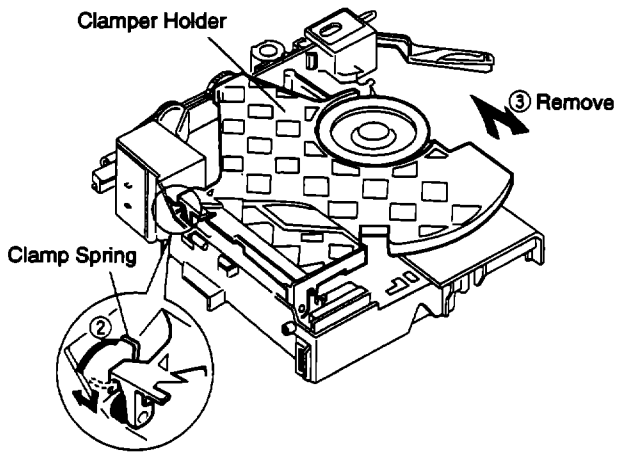


■ REMOVING THE ARM (A)

① Remove the float base together with the Servo Mechanism ASSY GM. (Refer to Steps ①–⑤ for "■ Removing the Servo Mechanism ASSY GM" .)

②-③

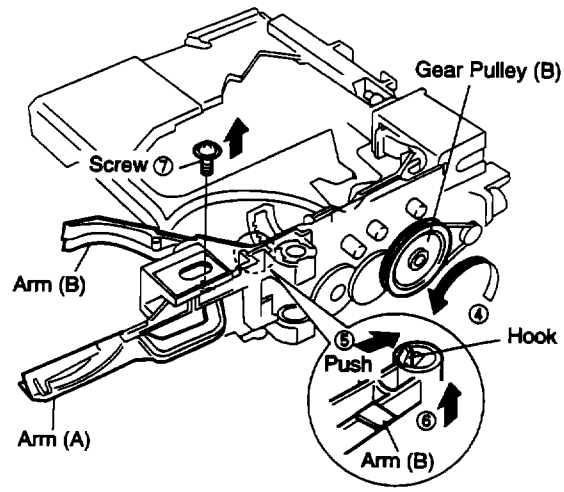
Remove the clamp spring and remove the clamper holder.



④ Turn gear pulley (B) and position Arm (A) as shown below.

⑤,⑥ Remove Arm (B) while pressing the hook in the direction of the arrow.

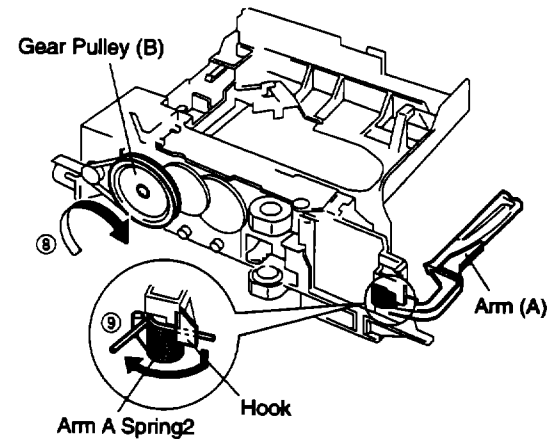
⑦ Remove screw ⑦.



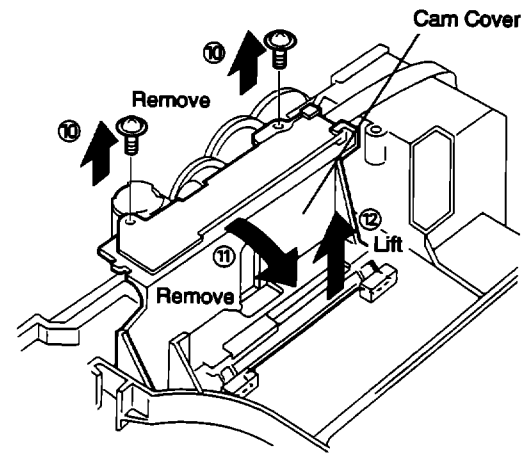
⑧ Turn gear pulley (B) and position Arm (A) as shown below.

⑨ Remove the Arm A spring2 from its hook.

Note: Do not hold the tip (blade) of arm (A) during operation.



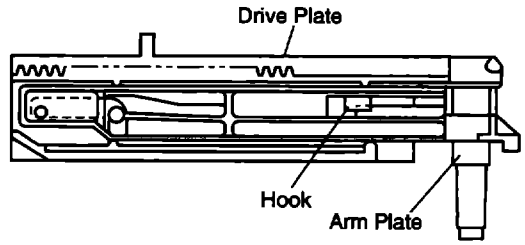
⑩-⑫



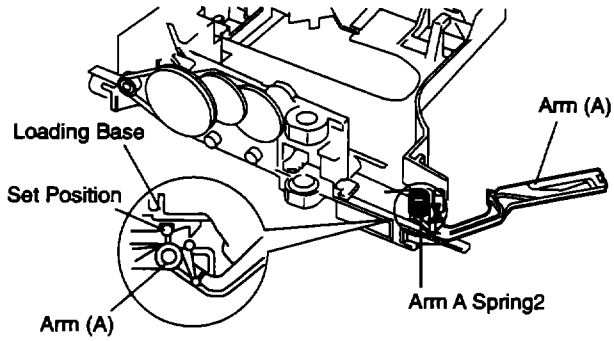
⑬ Remove drive plate, Arm plate, Arm A spring2 and Arm (A). (Refer to Steps ③-④ on page 47.)

■ FOR REASSEMBLY, REVERSE THE DISASSEMBLY PROCEDURE, AND IN ADDITION CARRY OUT THE FOLLOWING ITEMS.

① Assemble the arm plate as shown below, watching out for the drive plate hook.

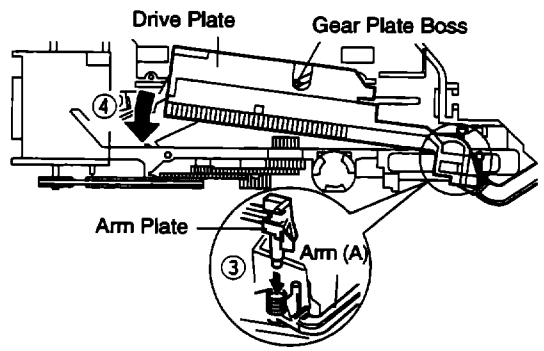


② Place Arm (A) and the Arm A spring2 on the loading base, being careful to keep them in the position shown below.

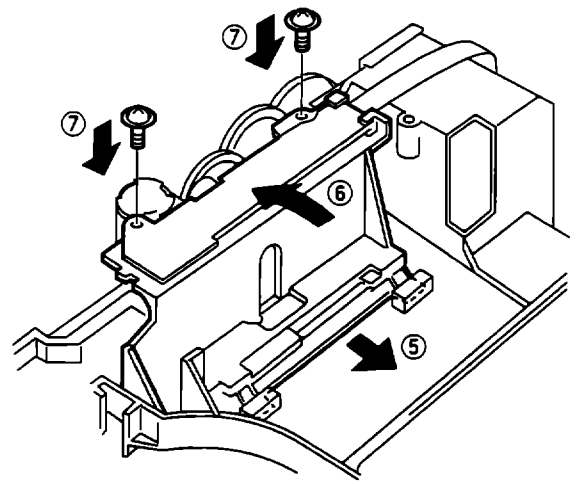


③ Set the drive plate and arm plate, which were assembled in Step ①, on the Arm (A) side as shown below. At this time be careful to keep Arm (A) in the position described in Step ②.

④ Insert the gear plate boss into the drive plate groove and pull it toward you.



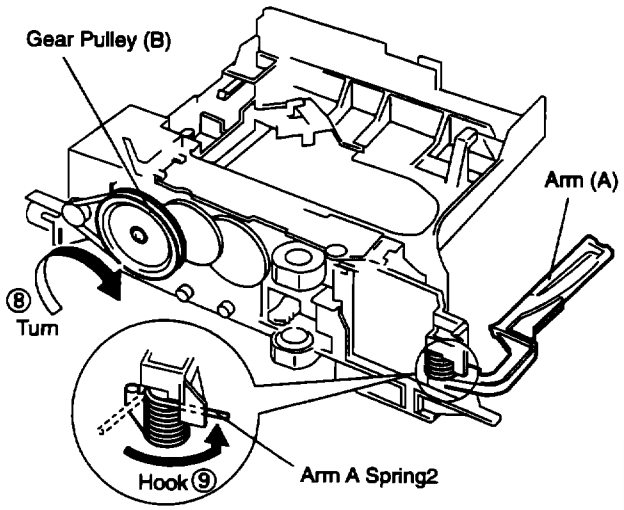
⑤-⑦



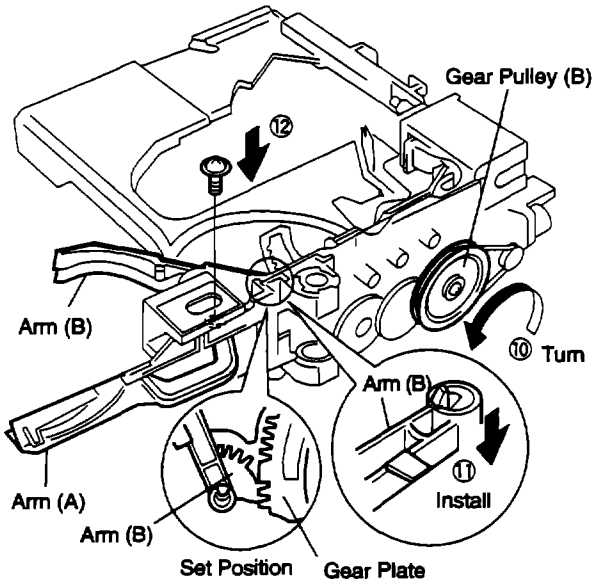
⑧ Turn gear pulley (B) and position Arm (A) as shown below.

⑨

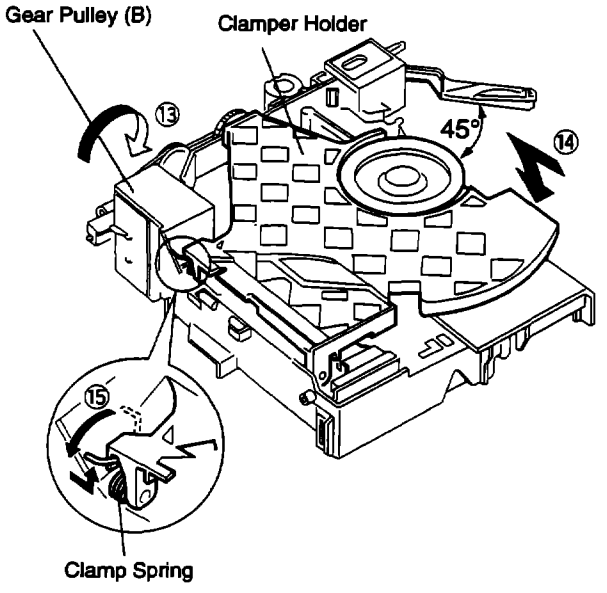
Note : Do not hold the tip (blade) of arm (A) during operation.



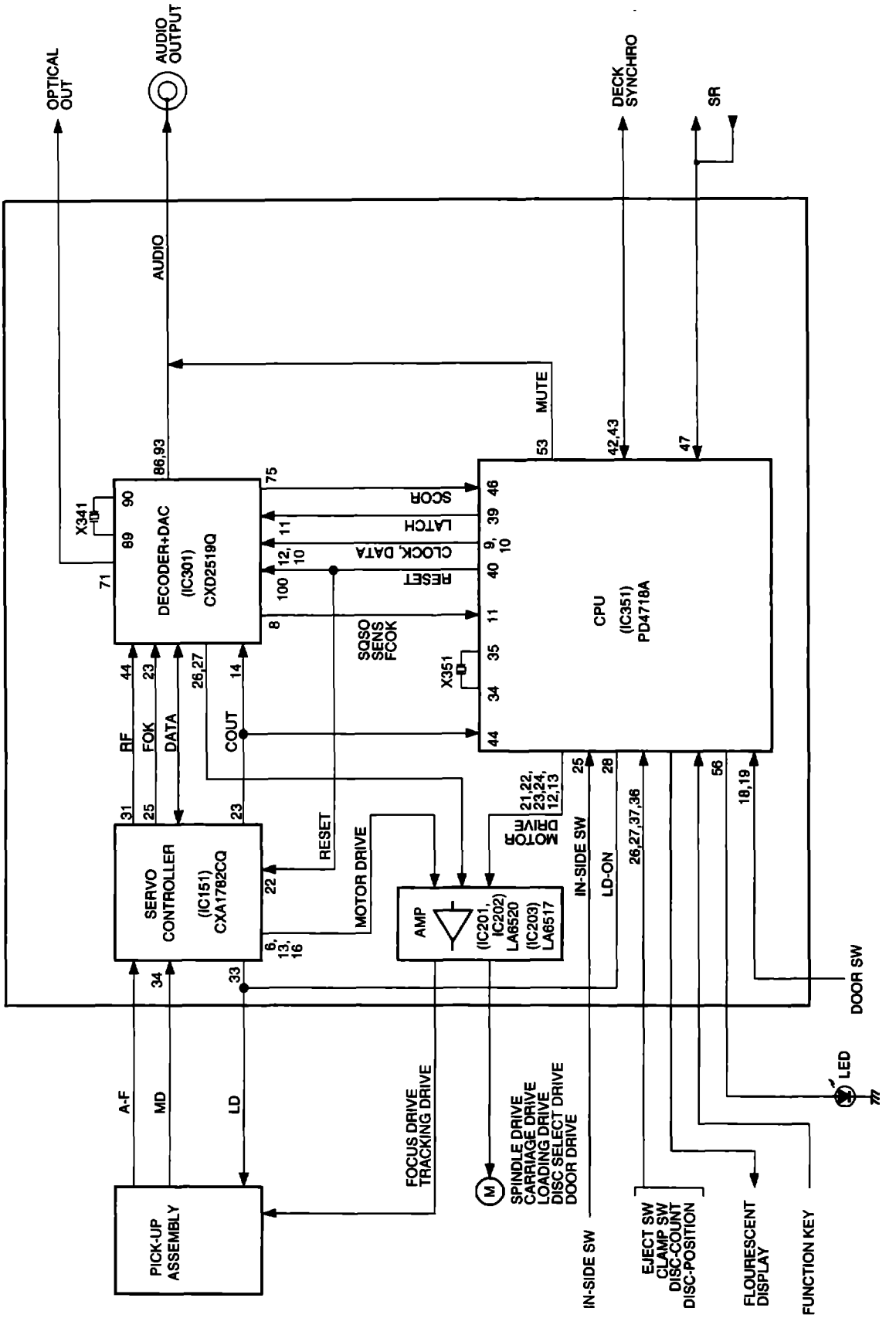
⑩-⑫


⑫
Gear Pulley (B)
Arm (B)
⑩ Turn
Arm (B)
⑪
Install
Arm (A)
Arm (B)
Set Position
Gear Plate

⑬-⑮

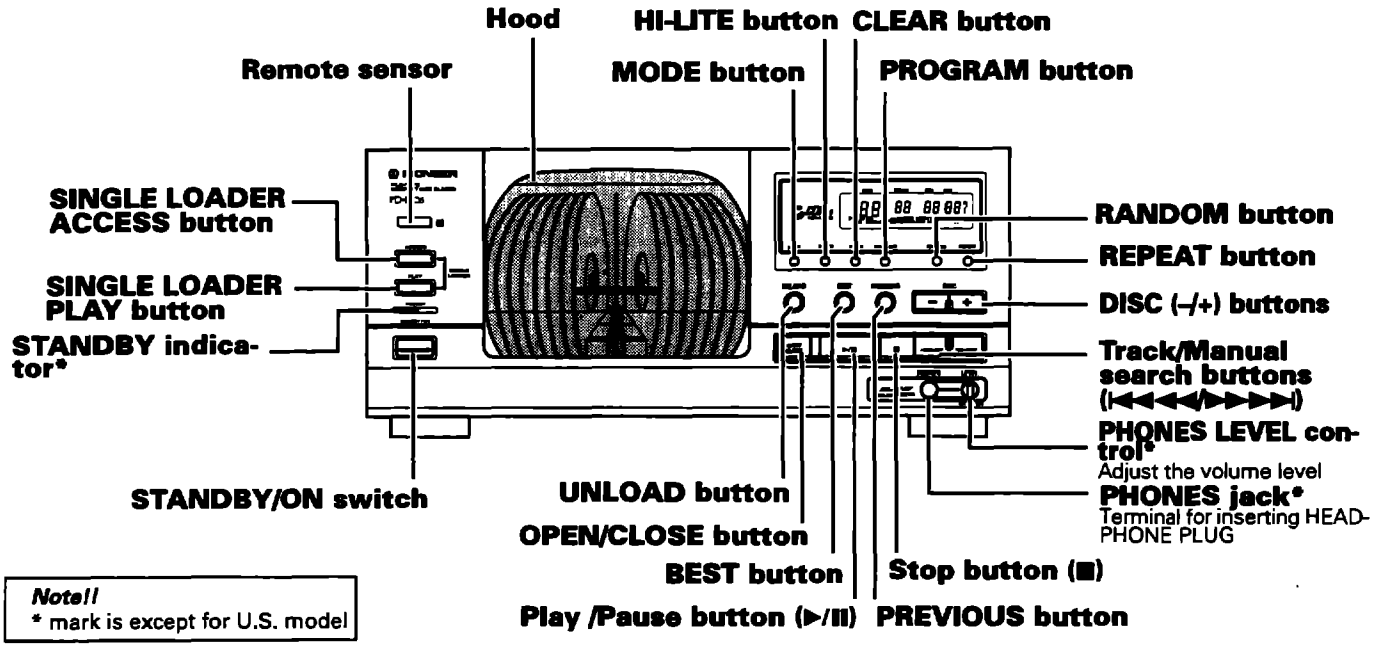

Gear Pulley (B)
Clamper Holder
⑬
45°
⑭
⑮
Clamp Spring

7.3 BLOCK DIAGRAM



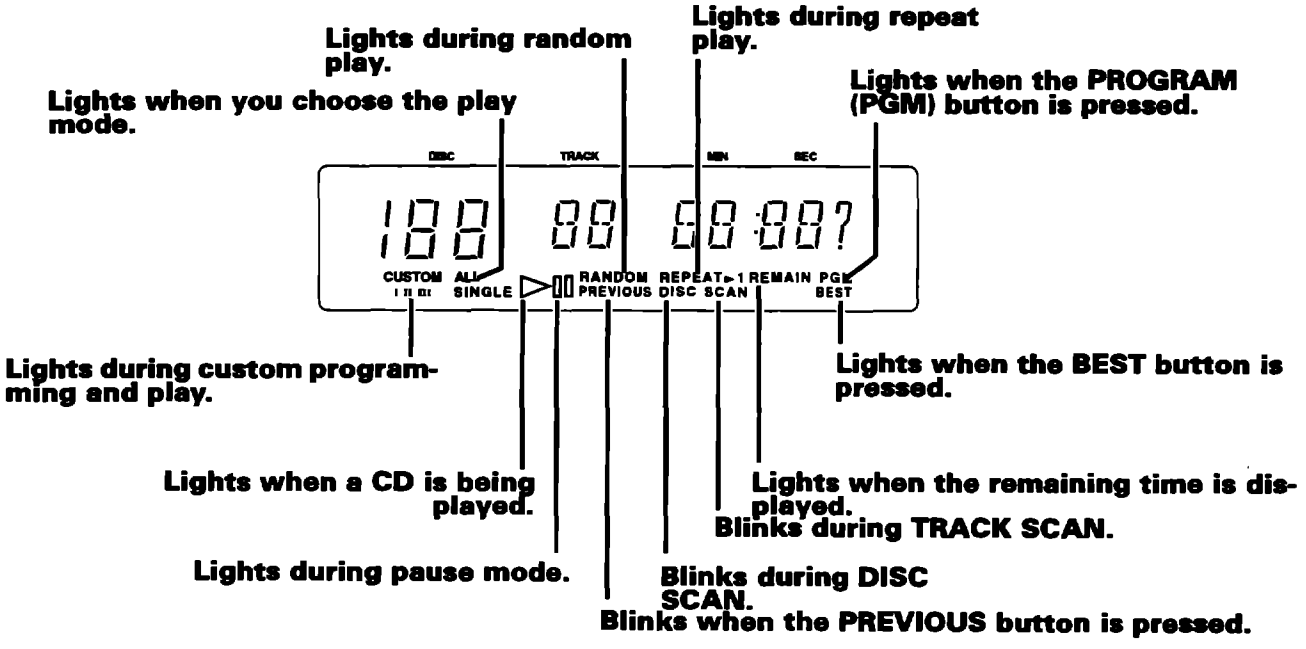
8. PANEL FACILITIES AND SPECIFICATIONS

FRONT PANEL



Note!!
* mark is except for U.S. model

DISPLAY



SPECIFICATIONS

1. General

Type ..... Compact disc digital audio system
Power requirements
U.S. and Canadian models ..... AC 120V, 60 Hz
U.K. model ..... AC 220-240V, 50/60 Hz
European model ..... AC 220-240V, 50/60 Hz
Multi-voltage model ..... AC 110-127/220-240V (switchable) 50/60Hz
Power consumption
U.S. and Canadian models 12W
U.K. model 14W
European model 14W
Multi-voltage model 14W
Operating temperature ..... +5°C - +35°C (+41°F - +95°F)
Weight (without package) ..... 6.5 kg (14 lb 5 oz.)
External dimensions ..... 420(W) X 402(D) X 190(H) mm 16-9/16(W) X 15-13/16(D) X 7-1/2(H) in.

2. Audio section

Frequency response ..... 2 Hz - 20 kHz
S/N ratio ..... 98 dB or more (EIAJ)
Dynamic range ..... 96 dB or more (EIAJ)
Channel separation ..... 96 dB or more (EIAJ)
Harmonic distortion ..... 0.003 % or less (EIAJ)
Level difference between channels ..... 1.0 dB or less (EIAJ)
Output voltage ..... 2 ± 0.3 Vrms (EIAJ)
Wow and flutter ..... less than ±0.001 % (W.PEAK) (below measurable level) (EIAJ)
Channels ..... 2-channel (stereo)

3. Output terminal

Audio line output
Control input jack (Except for U.K. model)
Control output jack (Except for European and U.K. models)
CD-DECK SYNCHRO jack
Optical digital output jack
I/O interface (European model only)
Head phone jack with volume control (Except for U.S. and Canadian models)

4. Accessories

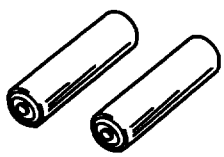
- Remote control unit 1
- Size AA/R6P dry cell batteries 2
- Output cable 1
- Control cable 1
- Operating instructions 1

Note!!
Specifications and design subject to possible modification without notice, due to improvements.

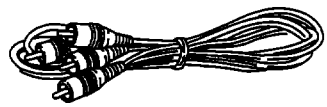
CONFIRM SUPPLIED ACCESSORIES

Remote control unit x 1

Size AA/R6P dry cell batteries x 2



Output cable x 1



Control cable x 1